MAY, 1934

COTTON

Serving the

TEXTILE INDUSTRIES

● In the Slasher room of the Tucapau Mills S-W Save-Lite Mill White STAYS white . . . Increases working light . . . insures against defects and spoilage. Furnished in Gloss, Eg-Shel, and Flat to meet every mill service need. Works easily with brush or spray. Economical to use—fine grind and balanced formula give Save-Lite greater covering and hiding power. Fewer gallons do the job. Repainting needed less often. Convenient stocks within 24-hour reach of your mill or plant, wherever it may be.

SHERWIN-WILLIAMS PAINTS

STANDARD FOR TEXTILE MILLS AND VILLAGES

TEXTILE OFFICES: Philadelphia--Charlotte--Spartanburg--Atlanta--Nashville--Newark, N. J.--Boston, Mass.

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YARNS

WE DON'T TELL 'EM
WE SELL 'EM

F. P. YARNS ARE ALWAYS AS REPRESENTED

"Golf yarns" are sometimes unreliable. ¶ F.P. yarns however are always as represented, insofar as care in manufacturing and vigilance in inspection can make such a thing possible. They are made by highly reputable manufacturers who pride themselves on standardization of quality, both in materials and in manufacturing methods. ¶ F. P. offerings include all popular counts and qualities—natural, bleached or dyed — in almost any put-up commonly used. ¶ We maintain large stocks in Providence and Philadelphia. ¶ Samples and prices on request.

FRANKLIN PROCESS COMPANY

Yarn Merchants and Yarn Dyers. Also Manufacturers of Glazed Yarns and Machines for Dyeing and Bleaching Yarns in the Package Form, Cotton and Wool Raw Stock, Worsted Tops and Worsted Yarn on Jackspools, also Machines for Soaking Silk. Main Office and Plant at Providence, R. I. Branch Plants at Philadelphia, Pa., Greenville, S. C., and Chattanooga, Tenn. New York Rep., 40 Worth Street.

FRANKLIN PROCESS

COTTON YARNS AND CUSTOM YARN DYEING

COTTON is published monthly by W. R. C. Smith Publishing Co. Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

Keeping Your Looms Fit
Something New
That You Can't Afford to Miss

We are inaugurating a new service.

Its Aim is to prolong the Life and increase the Productiveness of your Looms.

Modern Medical Science teaches us to preserve our Health and Physical Fitness by having an annual examination of our bodies.

Along the same line we are offering an Intelligent Expert Survey of your Looms and their Fitness to continue to give you 100 Per Cent Service.

And It Is Free

This Survey will include

Study by one of our experts of your weaves and the adaptability of your Looms to their production; and information and advice on new methods or later devices that will give you Better Cloth or Greater Production.

Going over your Looms by one of our service men in a New Form of Examination devised to Show You and Us just what is needed to prolong their life and efficiency.

Many of your Looms were idle for considerable time during the depression. For a year they have been running full tilt—perhaps Night and Day under Two or More Loomfixers.

Wouldn't You Like to Know
What Has Happened to Them?
What Doctoring They Need?

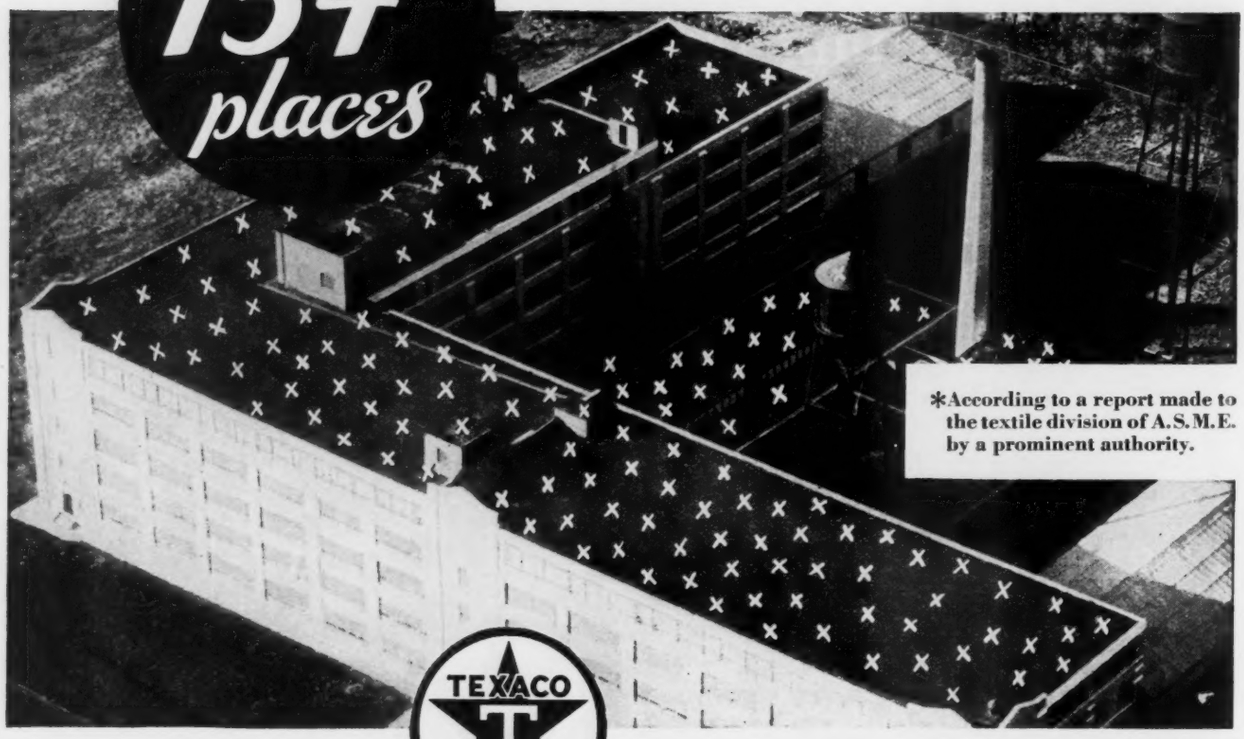
Let's
Talk It
Over

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

in 154 places* in your plant



*According to a report made to the textile division of A.S.M.E. by a prominent authority.

© FAIRCHILD SURVEYS

TEXACO REG. T. M.

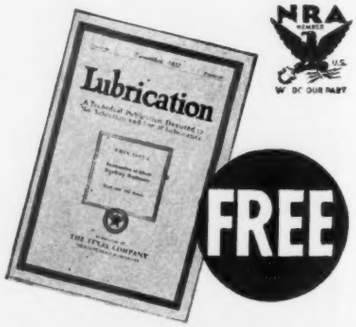
TEXACO *tested* LUBRICANTS

help lower production costs

Texaco meets your present need for lower production costs with a complete line of tested lubricants for 154 places in your plant—and a specialized engineering service that will help to improve machine operation and reduce spoilage.

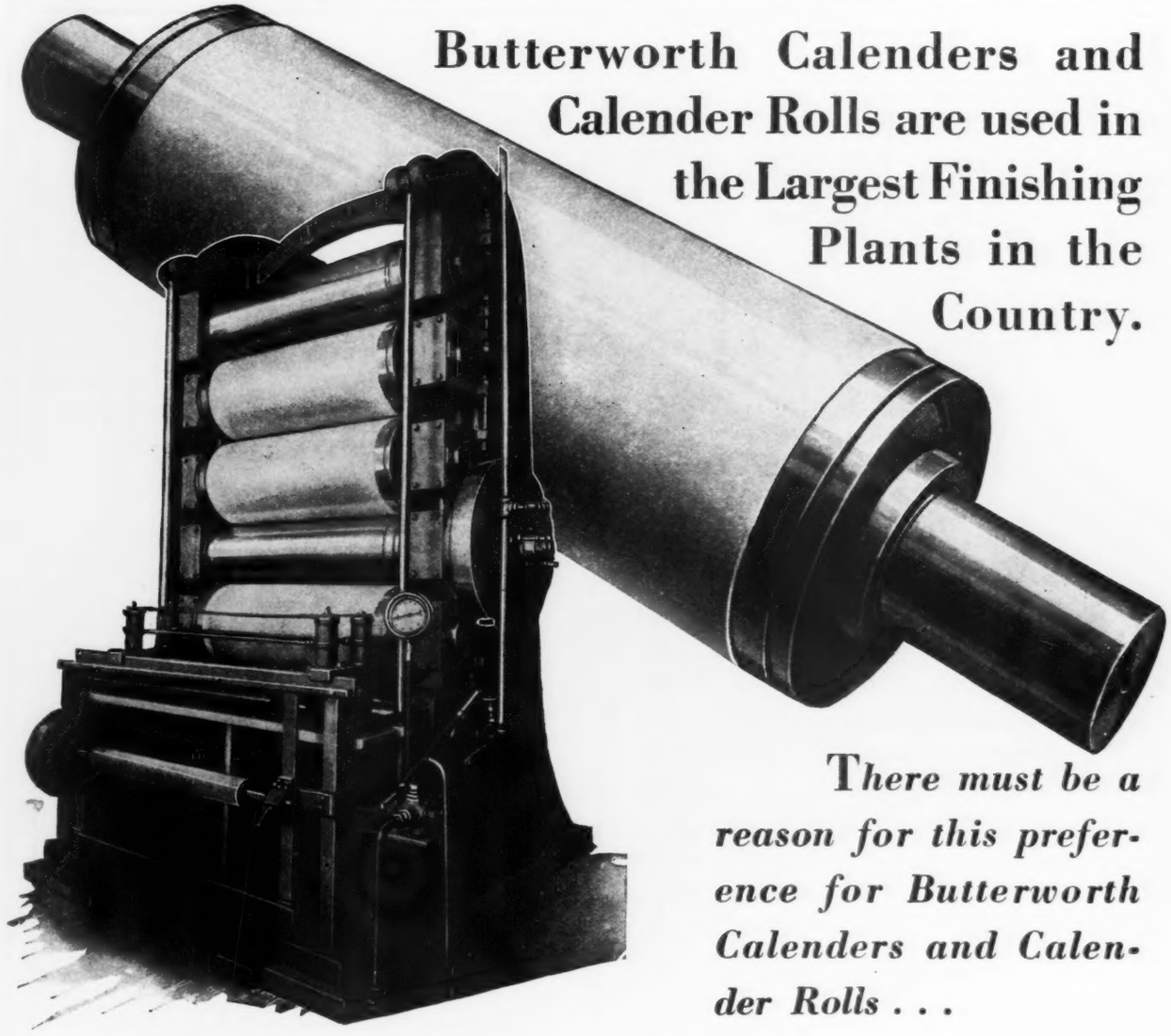
It is being *proved* in many textile mills that Texaco *tested* lubricants give effective lubrication to all kinds of textile machinery—from bale-breakers to trimmer frames. Texaco tested lubricants, properly applied, will not throw out, or result in spotting and spoilage. Texaco Engineering Service, because of a wide experience in all kinds of textile operations, can point out many practical operating economies.

If you want increased production—or lower costs for production—write to The Texas Company—no obligation.



HERE'S A SPECIAL ISSUE OF "LUBRICATION" ON TEXTILE MACHINERY. You will surely find it helpful. Write for it. Let us place your name on the mailing list. "Lubrication" is sent free. Write The Texas Company, Dept. J J 5.

THE TEXAS COMPANY, 135 E. 42d ST., N. Y. C. ★ *There is a Texaco Lubricant for every purpose*



Butterworth Calenders and Calender Rolls are used in the Largest Finishing Plants in the Country.

There must be a reason for this preference for Butterworth Calenders and Calender Rolls . . .

A list of users would read like the "Who's Who" of the textile finishing field. Included in these installations are scores of different types of calenders.

The calender shown here is installed in the Robertson Bleachery & Dye Works, Milford, Conn. It has 6 rolls, mounted in extra heavy, open side housings, and is equipped for hydraulic pressure, with hydraulic pump, ram, and accummulator. This particular calender was built to withstand a pressure of 30 tons.

Butterworth Calender Rolls for the Textile Industry include cotton, cotton and husk, Duxbury felt paper, Duxbury white cotton paper, rolls of German and English imported papers as well as domestic papers. We also make rolls for special finishes.

H. W. BUTTERWORTH & SONS CO.

Established 1820

PHILADELPHIA, PA.

PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

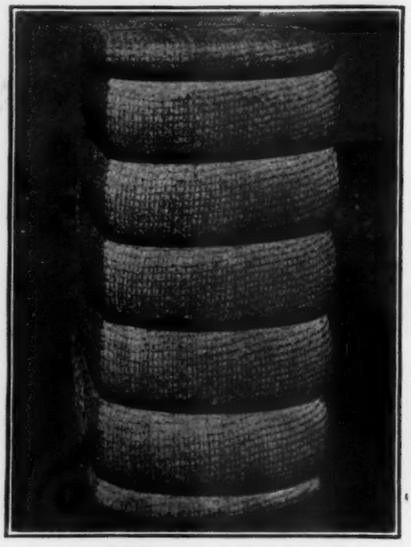
New England Office:	*Southern Office:*	*In Canada:*
TURKS HEAD BUILDING	JOHNSTON BUILDING	W. J. WESTAWAY CO.
Providence, R. I.	Charlotte, N. C.	Hamilton, Ontario

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY

The Wisdom of Age

The experience of our Company and its predecessors in the manufacture of OPEN WEAVE BAGGING, for covering raw cotton, for a period of over one hundred years, has given us a matured judgment that inspires and safeguards public confidence. Complete facilities and continuous personally interested service have played a large part in the building up of our present long list of satisfied customers.



American Manufacturing Company

NOBLE and WEST STS. BROOKLYN, N. Y.

BRANCH SALES OFFICES

311 Guaranty Building
GALVESTON, TEXAS

Eleventh and Soulard Sts.
ST. LOUIS, MO.

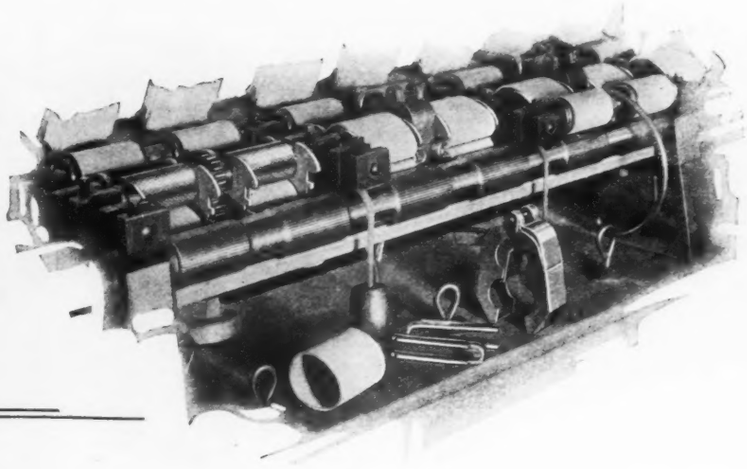
312 Tchoupitoulas Street
NEW ORLEANS, LA.

CHARLESTON BAGGING MFG. CO. BRANCH, CHARLESTON, S. C.

Also manufacturers of Rope and Twine, including "AMERICAN" Best Quality Manila Transmission Rope

WESTERN FACTORY: ST. LOUIS CORDAGE MILLS, ST. LOUIS, MO.

More than 20,000 SPINDLES within a few months



SALES of Whitin-Casablancas for roving frames are gaining ground every week, as more and more mills discover its remarkable advantages.

★ More than fifty cotton mills are partially or wholly equipped with this system today, and adding additional frames.

★ The principle of the system is based on sound mill practise and proven experience. More than two years of experimental and development work have been required to bring it to its present state of mechanical perfection.

★ We offer to you a finished product which will start to pay dividends immediately; not an experiment which is untried.

★ Read in the May issue of the magazine COTTON what has been accomplished . . . what can be done in your mill, on Whitin-Casablancas roving..

WHITIN MACHINE WORKS **WHITIN** WHITINSVILLE, MASS.

Cone Winding Cotton Knitting Yarn

CONE WINDING the last process in the Spinning Mill making yarn for Knitting, is the Mill's most important process.

The care and skill put into the production of a high grade yarn is rendered nil if the finishing process is not up to date.

The Foster Model 102 Cone Winder is a refinement of former Cone Winding processes, retaining all the time-approved features of the Foster Cone of former Models and adding more delicate manipulation of the yarn while winding, exact lay of coils on the cone surface to reduce variation in tension from the cone on Knitting Machine and additional slub-catching, making the 102 Foster Cone more than ever before the

"Standard Knitting Package"

Foster Machine Company

WESTFIELD, MASSACHUSETTS.

FRED P. BROOKS, REPRESENTATIVE, P. O. BOX 941, ATLANTA, GA.

WHY YOU GET BETTER YARNS WITH CLEARACOTS

CLEARACOT is a newly perfected roll clearer. It is not cloth but *vi gin wool*—exactly as it grows on the sheep. Its base is the skin of the animal, and wool and skin are tanned together so that the wool *can't pull out.*

CLEARACOT'S advantages over the usual clearer are:

(1) CLEARACOTS clean the rolls better. Result . . . *better quality yarn.*

(2) You get fewer slugs and nips with CLEARACOTS, consequently higher-grade yarns

(3) CLEARACOTS outwear other material by 2 to 3 years, so

CLEARACOTS Reduce Manufacturing Costs

(4) There are no torn cots at the pins with CLEARACOTS

(5) CLEARACOTS clean the rolls as well when old as new

(6) In CLEARACOTS the fibres will not pull out.

Famous Pequot Mills are Installing CLEARACOTS

So conclusively have CLEARACOTS demonstrated their superiority that such prominent mills as the Naumkeag Steam Cotton Company, manufacturers of the well-known Pequot Sheets, are rapidly replacing with CLEARACOTS their old clearers as these wear out.

A. C. LAWRENCE LEATHER CO. RELIABLE LEATHERS BOSTON U.S.A.

Test CLEARACOT Superiority *without Cost* . . . Fill Out and Mail the Coupon Below for FREE Samples

A. C. LAWRENCE LEATHER COMPANY

Peabody, Mass.
Greenville, So. Carolina

A. C. LAWRENCE LEATHER COMPANY, Peabody, Mass.
We enclose one of our present clearers. Send us FREE samples of CLEARACOTS same size as ours.

Signed .....

Mill .....

Address .....

.....

Spinners Listen To Others . . . .

But Continue To Use . . . .

The Universal Standard Ring Travelers

The Bowen Special Temper
Narrow Round Point
Square Point
Flat, Oval and Round Wire
The Bowen Vertical Steel
The Bowen Vertical Bronze
The Bowen Patented Bevel Edge
The Bowen Patented Vertical Offset
The Bowen Patented Ne-Bow Vertical

For Spinning and Twisting

IF YOU REQUIRE . . . . .

1. *Uniformity*
2. *Uninterrupted and Dependable Performance*
3. *Longer Life*
4. *Quality Product*

First Quality Cotton, Wool, Worsted, Silk and Rayon Yarns are produced only by using ring travelers that dispel any doubt as to their performance and manufacture . . . . . UNIVERSAL STANDARD RING TRAVELERS . . . . . meet these requirements, and more, effect a gratifying saving in ring traveler costs by the extra measure of service and life they assure. . . . . Order them now. . . . . Samples mailed upon request.

U. S. Ring Traveler Company

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN
President and Treasurer

SOUTHERN SALES REPRESENTATIVES

William P. Vaughan
P. O. Box, 792
Greenville, S. C.

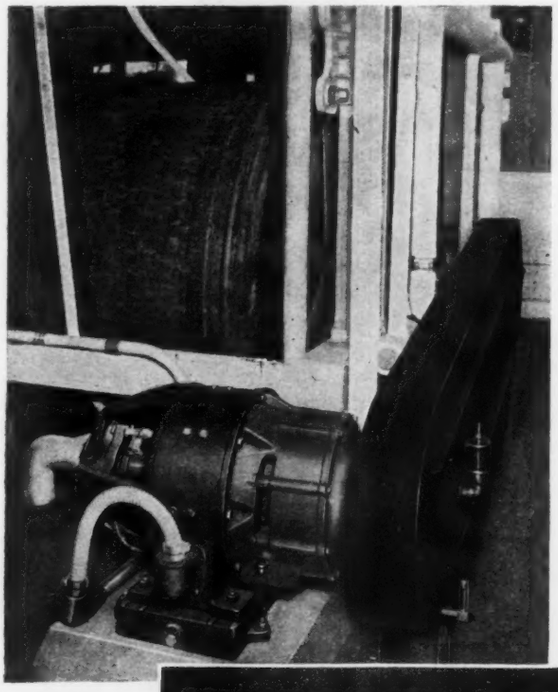
Oliver B. Land
P. O. Box, 158,
Athens, Georgia

Torrence L. Maynard
P. O. Box, 454
Belmont, N. C.

"A TRAVELER FOR EVERY FIBRE"

SAVE SPACE
REDUCE MAINTENANCE
SIMPLIFY INSTALLATION
IMPROVE APPEARANCE

with



GEAR-MOTORS

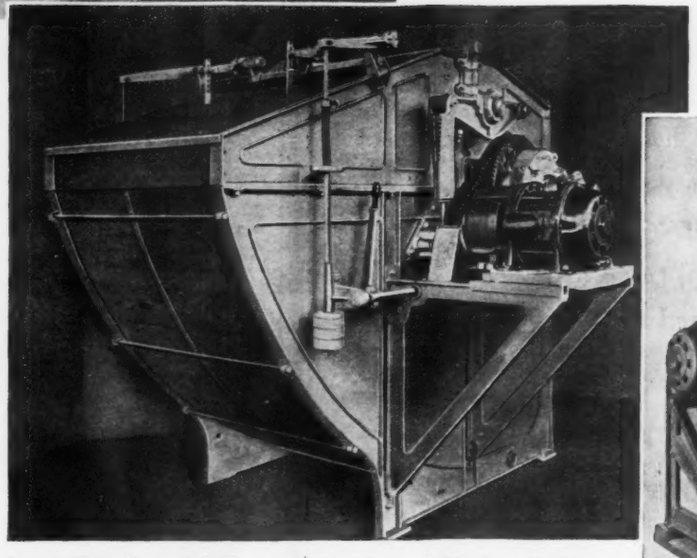
. . . compact, efficient drives for your low-speed machines

Since G-E gear-motors deliver the desired low speed direct to the output shaft, they eliminate the backgearing or countershafts formerly required by many equipments. With them, therefore, you can save space, simplify installation problems, reduce maintenance.

What's more, G-E gear-motors are efficient. They combine the economies of a normal-speed motor with the compactness of a built-in helical planetary gear reducer. They are smooth-running, dependable, long-lived — the kind of drive that will save you money. For complete information, address the nearest G-E office; or General Electric, Dept. 6 B — 201, Schenectady, N. Y.

ABOVE: Simple, compact installation of G-E gear-motor chain-connected to range-driven dry cans

RIGHT: Efficient, individual drive for fulling mill, using G-E gear-motor



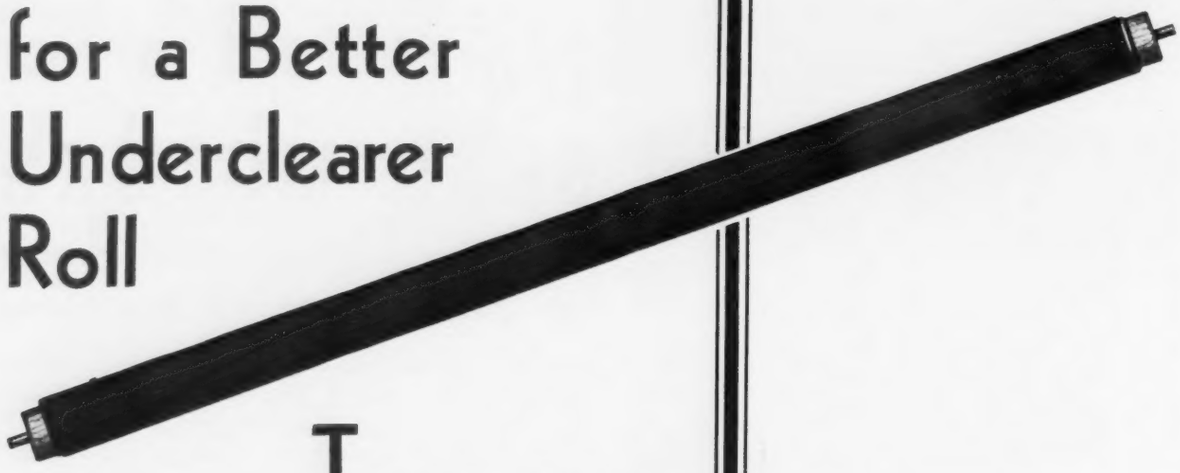
BELOW: Neat, space-saving arrangement of G-E gear-motor driving textile finishing machine

A complete line of G-E gear-motors is available in polyphase, single-phase, and direct-current types. Standard ratings are listed from 1/6 to 75 hp., from 11 to 600 rpm. Other ratings can be supplied to meet the individual requirements of your driven equipment.

GENERAL ELECTRIC

020-28

Meeting the Demand for a Better Underclearer Roll



THE Improved LUCAS Underclearer Roll has established a reputation of being the most efficient underclearer roll on the market. It is far superior to ordinary rolls and many mill men state it is worth three times the price of the ordinary roll. It is light in structure, easy to handle, cleans 50% easier, lasts the life of the pins without recovering and runs absolutely true.

The spiral groove assists in keeping the fluted rolls perfectly clean and will not permit the fly to collect and let go in bunches. It catches the broken strands immediately, avoids double ends and eliminates coarse, heavy threads in the yarn.

When it needs cleaning it can be stripped with the hand easily and quickly.

The Improved LUCAS Underclearer Roll is a hollow sealed roll, constructed of specially compressed paper that will not warp under mill conditions, with rock maple, fibre, or steel ends and steel gudgeon pins. They are trued up after assembling and always run absolutely true on the frames.

Send us one of your rolls and we will duplicate it for trial. Find out why so many mills enthusiastically endorse the LUCAS as the most efficient underclearer roll on the market.

THE L. M. HARTSON COMPANY
NORTH WINDHAM, CONN.
Established 1866

Southern Representative
EDWARD F. COOK, COOK-TAYLOR CO., 1906 BREVARD ST., CHARLOTTE, N. C.

The Improved

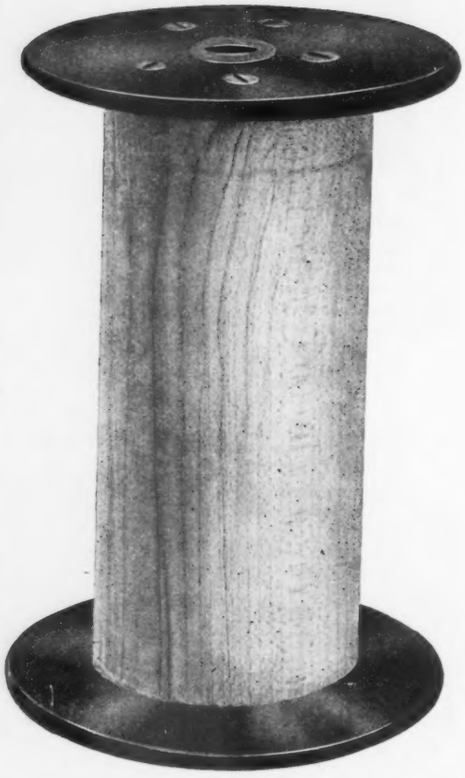
LUCAS

(Patent No. 1,874,560—Aug. 30, 1932)

UNDERCLEARER ROLL

for

Spinning, Mule and Roving Frames

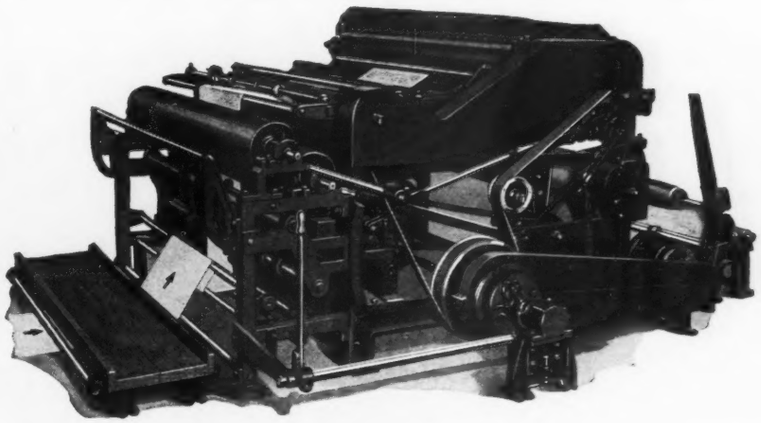


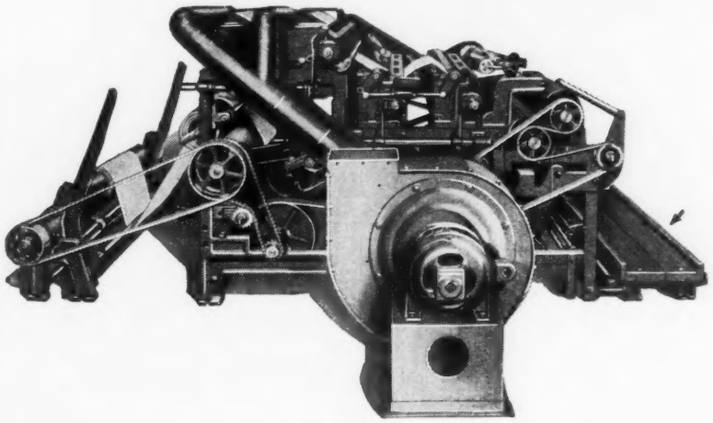
WE ALSO MANUFACTURE

Higher Quality Bobbins of maple with steel, fibre, bakelite and dogwood heads; Enamelled Bobbins; Flyers; Travelers; Spindles; Thread Guides; Swifts and Swift Sticks; Creel Buttons and Mill Nuts; and other supplies for textile, rayon and silk mills.

SHOWING BOTH SIDES
of the
AUTOMATIC COTTON SHEAR
with
FOUR BLADES
and
TWO TRIMMER ROLLS
SHEAR and EXHAUSTER
SEPARATELY MOTORIZED

Right view to the right
Left view below





NO GIRLS
OR
SHEAR TENDERS
NEEDED

OUR AUTOMATIC COTTON SHEAR
PERFECTLY CLEANS THE CLOTH
AND
SAVES MONEY AT THE SAME TIME
WE PROVE IT BY A

FREE TRIAL

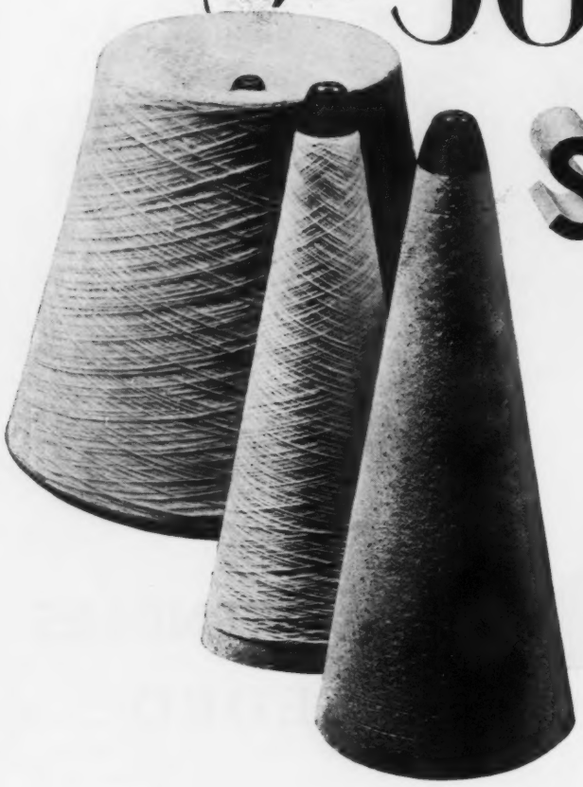
YOUR TRIMMING, BURLING AND CLEANING NOT ONLY COSTS YOU NOTHING
BUT SAVES YOU A HANDSOME SUM EACH YEAR

WRITE TO

P. B. RAIFORD, Jr., CONCORD, NORTH CAROLINA

PARKS & WOOLSON MACHINE CO.,
SPRINGFIELD, VERMONT

for 50s and finer counts—



SONOCO

ORIGINATORS OF

VELVET SURFACE CONES

•

EXPERIENCE has shown that in coning cotton yarns of 50 count or finer the ***best*** packages are built up on Velvet Surface Cones. Corrugated Surface Cones are made with a highly satisfactory surface for coarser counts. Our booklet on eliminating press-off waste will be sent upon request.

NRA

SONOCO PRODUCTS COMPANY

HARTSVILLE, S. C.

Branch Plants:
Rockingham, N. C.
Brantford, Ont.
Garwood, N. J.

Main Plant and
General Offices:
Hartsville, S. C.

Eastern Sales Office:
North Avenue,
Garwood, N. J.

1926
30,000
Spindles

MARTHA MILLS
at Silvertown, Ga.
built for
The B. F. Goodrich Co.,
by
Batson-Cook Co.

1929
80,000
Spindles

-and

AGAIN
in 1934

THE recent enlargement of the B. F. Goodrich cord mill at Silvertown, Georgia, brings their total spindleage to 135,000. We point with pride to our selection as contractors for this modern construction, not only on the original unit in 1926, but the entire development, including the village houses.

The preference for Batson-Cook construction among textile mills is significant. Long experience, reliability, minute attention to details and speed of construction all combine to make the finished job of lasting quality and satisfaction to our customers.

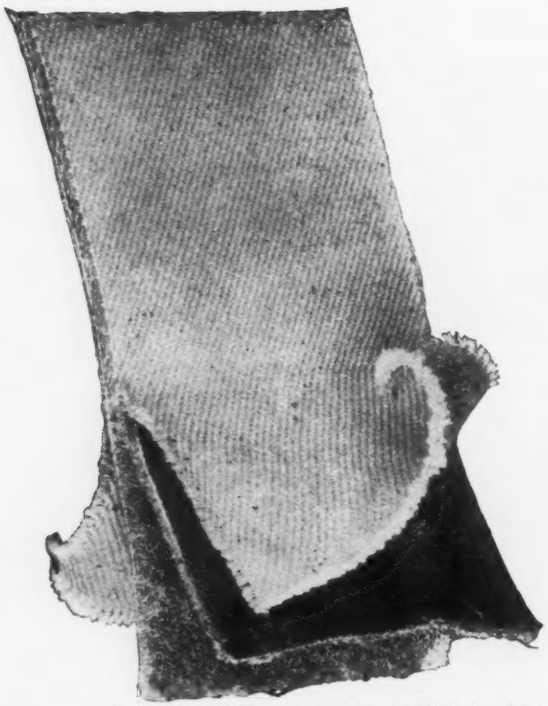
Other Construction by Batson-Cook includes:

West Boylston Mfg. Co.,
of Alabama, Inc.
Pepperell Mfg. Co.,
of Boston, Mass.
West Point Mfg. Co.,
of West Point, Ga.
Crystal Springs Bleachery Co.,
of Chickamauga, Ga.
Goodyear Tire & Rubber Co.,
of Akron, Ohio.
Highland Mills,
of Griffin, Ga.

BATSON-COOK CO
WEST POINT · GEORGIA

· Builders of Commercial · Industrial & Public Buildings ·

· GENERAL CONTRACTORS ·



Tuffer Foundation, a section of which is shown pulled apart, is covered by U. S. Patent 1,773,783.

With the STRENGTH *of* "PLYWOOD" *yet Flexible*

Layer by layer, Tuffer Foundations are built like "plywood" right here in our own factory. Sections of fabric, whether for wool, worsted, cotton or asbestos carding, are carefully joined together to produce uniformly flexible foundations. This "plywood" construction adds maximum strength and holds the foundation evenly with just the right amount of flexibility to give every wire proper freedom when accepting the blow of coming in contact with the stock being carded.

All component parts of Tuffer foundation are made under rigid specifications solely for Howard Bros. Mfg. Co. The glue that holds the layers together is oil-proof, which is an important feature.

Leather foundations for fancies, rings, feed rolls and lickerins is also carefully prepared. Our own men select and inspect the rough as well as the finished leather even though this privilege costs us a premium which enables us to give you the very best quality obtainable.

A few of the most popular foundations furnished by us to the leading mills in the country are Cylinder Cloth, Wool Face, Felt Face, Rubber Face, Special Woven, and Leather built-up to exacting specifications.

Our insistence on quality is responsible for efficient card room operation throughout the textile industry.

Tuffer Products
Lickerin Fillets
Feed Roll Fillets
Doffer Fillets
Fancy Fillets
Cylinder Fillets
Doffer Rings

TRADE MARK TUFFER REG. U.S. PAT. OFF.

Tuffer Products
Strickles
Emery Fillets
Burnisher Fillets
Top Flats Recovered and Extra Sets Loaned

Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles.

HOWARD BROS. MANUFACTURING CO.

HOME OFFICE & FACTORY—WORCESTER, MASS.

SOUTHERN PLANT
244 Forsyth Street
Atlanta, Ga.

BRANCH OFFICES
Philadelphia, Pa., Dallas, Texas,
and Washington, D. C.

The increase in spindles in the cotton mills of eight southern states in 1933 was 279,750--the largest increase since 1929.

OF COURSE THERE ARE *Many Reasons*

●

More than 37% of this total southern increase—103,596 spindles to be exact—was added by mills in Georgia. The increase in Georgia was almost twice as great as that of any other southern state. Cotton in abundance, of course—pure water—electric power adequate for the largest needs at a cost that compares favorably with the lowest in the nation—equable climate twelve months of the year—a valuable reserve of intelligent labor—these are some of the reasons.*

●

GEORGIA POWER COMPANY

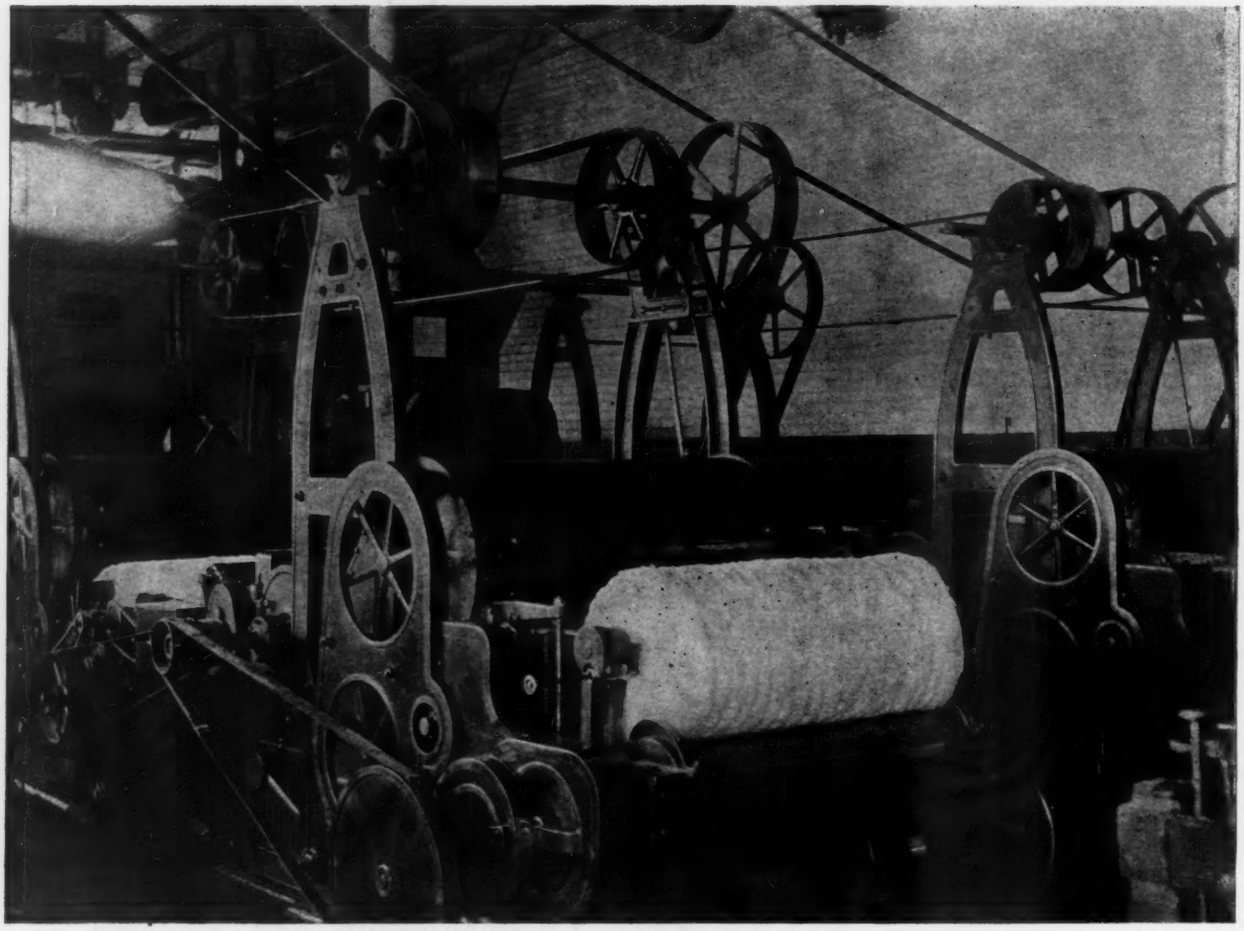
Specific surveys, dealing with many locations and factors--but no generalities--are available to those who write the Industrial Department, Georgia Power Company, 75 Marietta Street, Atlanta, or care Commonwealth and Southern Corporation, 20 Pine Street, New York City. Special surveys, to answer your own particular requirements, will be made at the request of interested executives.

●

**This is more than twice as many spindles as were added by ALL southern states in 1932.*

Aldrich Synchronized Single Process Picking

The only Single Process Picking System which does not overload the evener.



Where all other systems *add* load to the evener, the Aldrich System *takes load off.*

This makes evener laps with fewer losses.

The Aldrich System of Synchronized Single Process Picking has repeatedly proved itself on comparative tests to be the best, and more pickers have been changed to it than to any other system.

Made and Installed by

AldricH MachinE

Greenwood, **WorkS** South Carolina

DULUX PAINT-OUT TEST AMAZES FACTORY EXECUTIVES

REG. U. S. PAT. OFF.

DULUX Mill White—Whiter at the start Stays whiter on factory walls

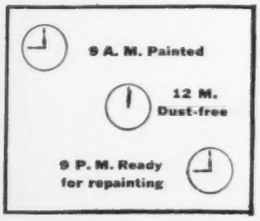
THE difference is startling. Try this test yourself. Finish one-half of a wall in your plant with DULUX Mill White. The other half with some ordinary mill white.

You'll notice that DULUX is slightly whiter at the start. But as days roll along, the difference will become more and more apparent. Six months later the DULUX will be almost as white as the day it was put on. But the other mill white will have yellowed—will have grown prematurely gray—have become smudged from finger prints.

You can *feel* the difference. DULUX is smooth and tile-like. Your fingers slide along the surface without resistance. Ordinary mill whites are comparatively rough. Your fingers *skip* along the surface—"after-tack" tends to catch every smudge, every finger print. That's one reason why ordinary mill whites become dull and dirty so quickly.

Make this test in your own plant. Discover for yourself the amazing whiteness and other advantages of DULUX. E. I. du Pont de Nemours & Co., Inc., Finishes Division, Wilmington, Del.

Painting is faster. DULUX flows off the brush more smoothly than any mill white you ever knew. Free-flowing, it levels off to a smooth tile-like surface. Brush marks in ordinary mill whites leave thousands of tiny shelves where dirt clings.



Dust-free in 3 to 6 hours—ready for repainting in 12 to 24! About half the time required by ordinary mill whites. This faster drying eliminates costly tie-ups in your plant.

Notice the excellent gloss retention of DULUX after 20 month's exposure. The gloss of the competitive panels has almost disappeared. DULUX Eggshell has a lower lustre, but is equally durable.

Multiply these dirty finger prints by thousands and you'll see why ordinary paint jobs don't stay fresh-looking very long. DULUX dries hard—resists this smudging. After months of service it's as easy to clean as a china bowl.

DU PONT
REG. U. S. PAT. OFF.

DULUX
REG. U. S. PAT. OFF.
MILL WHITE

SEND COUPON FOR FREE DULUX MILL WHITE BOOKLET

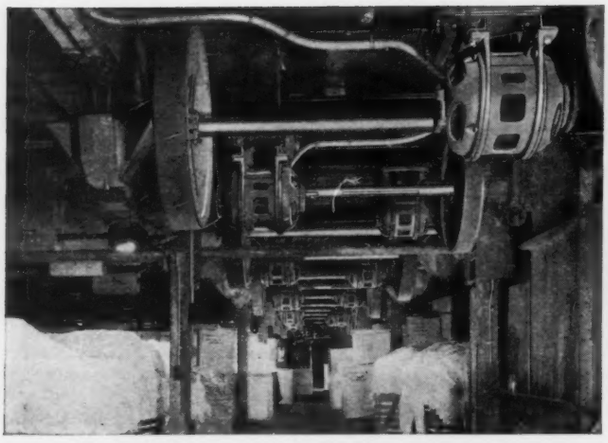
E. I. du Pont de Nemours & Co., Inc.
Finishes Division,
Wilmington, Del. C-5

Gentlemen:
I'm interested. Send me your descriptive booklet, "DULUX MILL WHITE."

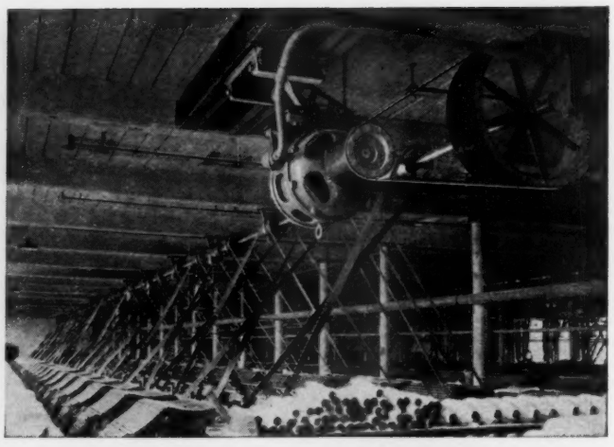
Name _____

Address _____

City _____ *State* _____



Group of ROCKWOOD Ceiling Drives to lineshafts in weave room basement.—The Appleton Co., Anderson, South Carolina.



ROCKWOOD Ceiling Drive to lineshaft in card room. — The Appleton Co., Anderson, South Carolina.

Drive Performance that Appeals to Textile Engineers

If you are considering any changes to motor drives in your mill—either for lineshafts or individually-driven machines — we will be glad to show you how well the ROCKWOOD Drive will serve your requirements.

The good word we get from the numerous mills that are using ROCKWOOD Drives indicates that we have something particularly suitable for textile mill service.

Textile engineers remark about the smooth steady performance of these drives—month after month, year after year. Others comment on their simplicity and economy.

All *of them* mention the big feature of the ROCKWOOD Drive—its *automatic* belt tension control—which eliminates production loss and bother of loose, slipping belts.

ROCKWOOD engineers will gladly assist you with layouts for installation. They will bring you—or send you—detailed information, without obligation. Why not write today?

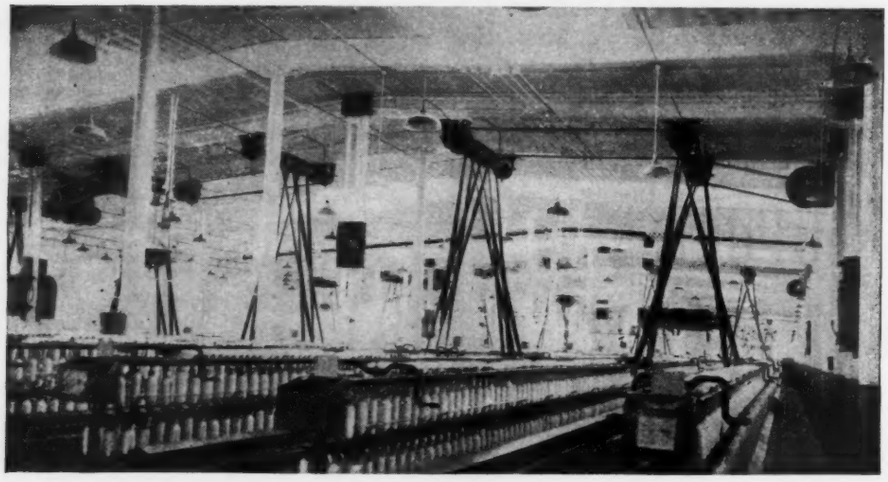
THE ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, INDIANA

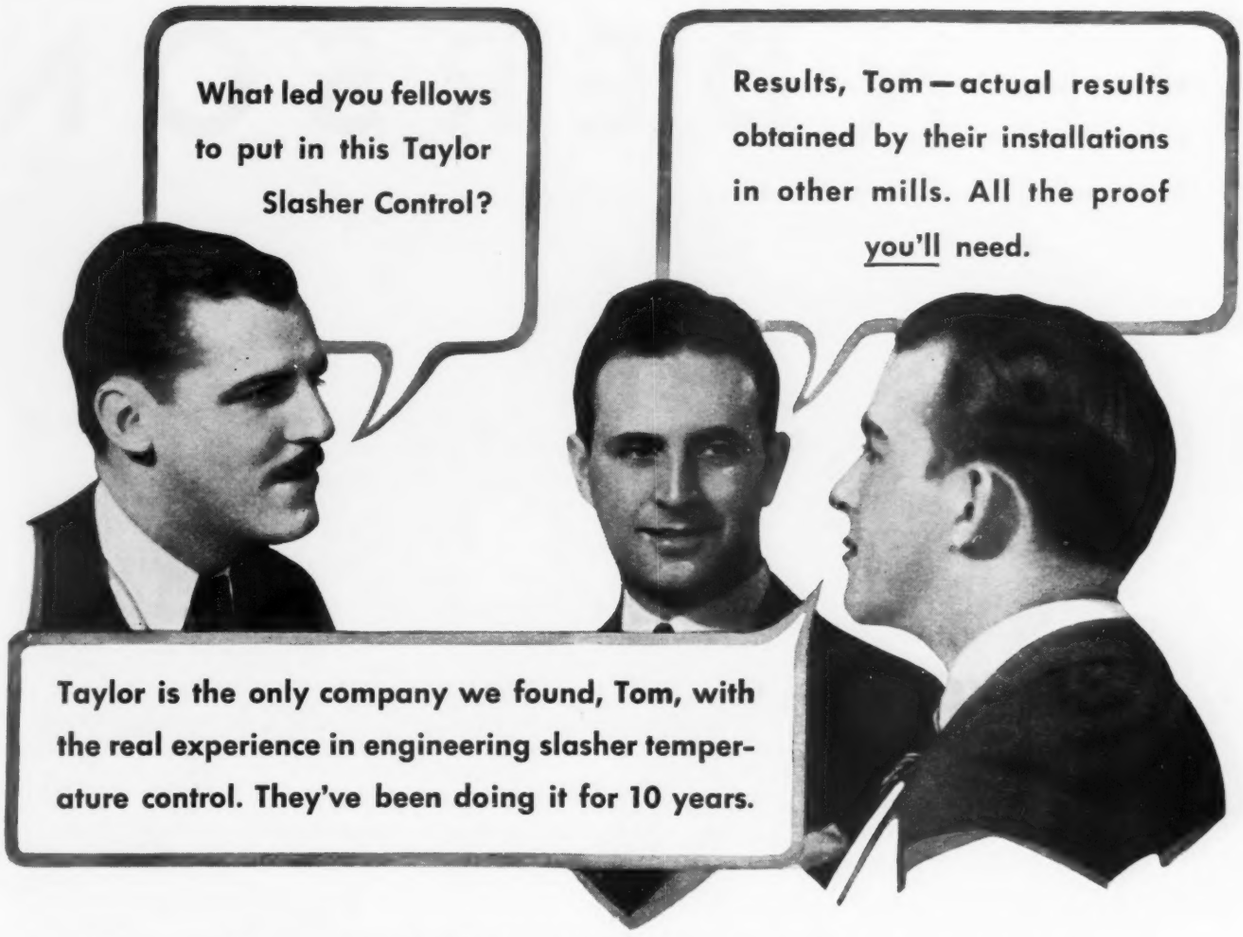
Division of General Fibre Products, Inc.

ROCKWOOD

SHORT-CENTER FLAT BELT DRIVE

ROCKWOOD Standard Drive, ceiling mounted, each driving groups of eight spinning frames—Manville-Jenckes Co., Manville, Rhode Island.




What led you fellows to put in this Taylor Slasher Control?
Results, Tom—actual results obtained by their installations in other mills. All the proof you'll need.
Taylor is the only company we found, Tom, with the real experience in engineering slasher temperature control. They've been doing it for 10 years.

Demand proof *of efficiency and economy when you investigate slasher temperature control. Taylor offers actual operating results as* proof.

AUTOMATIC SLASHER CONTROL, engineered and installed by Taylor, is saving textile mills thousands of dollars today on comparatively small investments.

Taylor has no quickly thrown together method for controlling temperature with a collection of individual instruments. It does offer a specially engineered unified system of indicating, recording and controlling instruments built into every step of the slashing process and installed under strict supervision. Taylor pioneered in this type of temperature control. And Taylor engineers work today on the basis of years of accumulated experience in designing, and of actual results in operating such systems.

EXAMPLE: *29 mills cut warp breakage by installing Taylor Control. They found it necessary three years ago to cut costs—and still retain the uniformly high quality of their goods. They had Taylor put systems of automatic temperature control in their slashers. Over a two-year use of these systems the average decrease in breaks per loom ranged from 24% to 47%.*

Other results were: Fewer loom stoppages. Maintenance of cloth weight standards. Properly balanced cotton content. Less shedding. Increased production of higher quality goods.

EXAMPLE: Another mill invested $8,000 in Taylor Slasher Control and saved $30,000 the first year. Results speak louder than words when you are selecting accurate, automatic temperature control.

There is one sure way to learn whether Taylor can cut your costs and help produce a uniformly better product. Let a Taylor Man survey your present set-up. Let Taylor engineers design and install the system you may need. Remember that in most instances Taylor Slasher Control has paid for itself in a year. For full information and help on temperature problems, address the Taylor sales offices in Atlanta, Boston, or Toronto, Canada. Or write Taylor Instrument Companies, Rochester, N. Y.

Taylor

Indicating | Recording • Controlling

TEMPERATURE *and* PRESSURE INSTRUMENTS

HENDERSON

•

No

"Guess Work" in *These* Parts

When you purchase a HENDERSON Repair Part for any textile machine, you can be sure that it is perfectly accurate and always fits the machine for which it was intended. We have precision patterns for practically all makes of textile equipment. There is never any "guess work" in a HENDERSON Repair Part.

Anticipate breakdowns and eliminate time-loss by replenishing your stocks of repair parts NOW. Let us quote you on any textile part, large or small.

HENDERSON FOUNDRY & MACHINE WORKS

HAMPTON
GEORGIA

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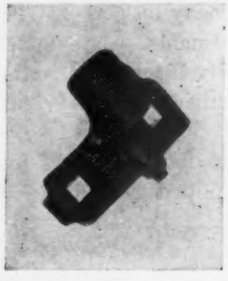
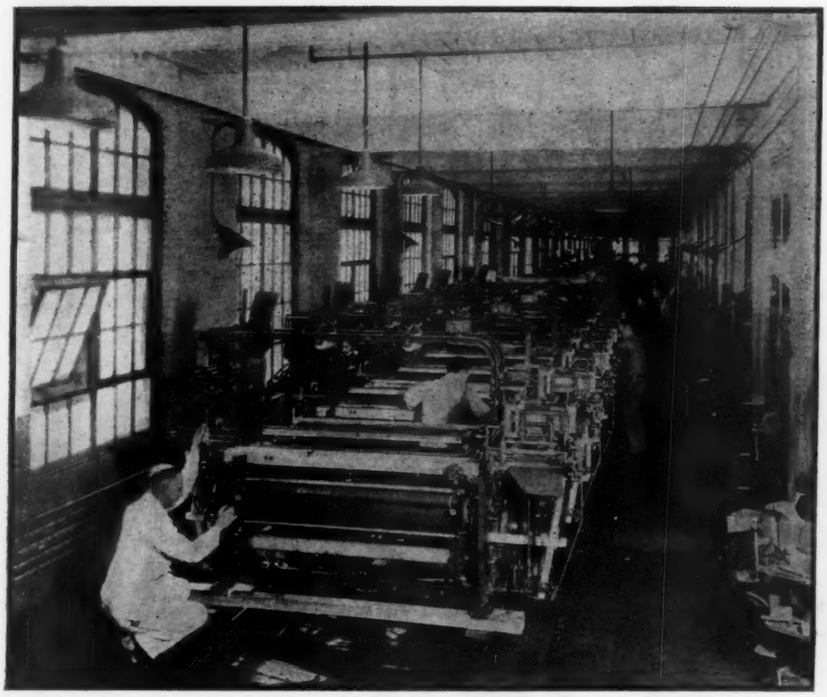


REPAIR PARTS

ASK CROMPTON & KNOWLES THEY KNOW ABOUT HYATT ROLLER BEARINGS IN LOOMS

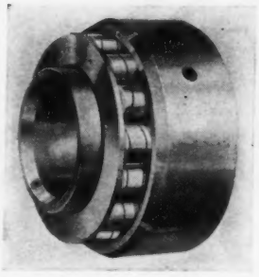


A battery of Hyatt equipped C & K Looms ready for shipment passing through final inspection at Crompton & Knowles plant.

They certainly should know. They have installed over 100,000 of these quality bearings in their looms.

Their successful experience in equipping crankshaft, camshaft, rockershaft, take-up and dobby drive should mean something to you, Mr. Millman.

The modern trend is to Hyatt Roller Bearing Equipped Looms.



WHEN YOU *REPLACE* OLD LOOMS, why perpetuate obsolete bearing practice.

Make your bearings modern, too. No loom, however, new or modern, is completely modern unless it is equipped at major points with Hyatt Roller Bearings. Specify Hyatts by name. Hyatt Roller Bearing Company, P.O.Box 476, Newark, N.J.

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

Sales Builders for SOUTHERN TEXTILES

New Designs
Reproductions

LABELS • TICKETS
BANDS • HANG TAGS •
BOLT ENDS • RIDERS • •

JACOBS GRAPHIC ARTS COMPANY
CLINTON___SOUTH CAROLINA

- A kier boiling assistant which gives a better white
- To be used only with soft or softened water
- For full particulars apply—

GENERAL DYESTUFF CORPORATION

USC Igepons

230 Fifth Avenue New York, N. Y.

The Wheels are Beginning to Turn Again

The call is coming for COCHECO from plants throughout the country. The wheels of industry, picking up speed as business improves, are beginning to hum, and COCHECO Belting is needed to help transmit the power to drive them.

COCHECO Belting is a favorite wherever quality leather belting is used. Some of the country's largest industrial plants are regular COCHECO users, and mills, mine shops, power plants, contract and experimental shops---all show their appreciation of COCHECO value and quality by reorders.

Our "Book on Belts" tells why quality leather belting— COCHECO Belting— is the most efficient, most popular driving medium for many purposes.

J. B. Williams & Sons Dover, New Hampshire

DETROIT CHICAGO GREENVILLE, S. C. NEW YORK PHILADELPHIA

Perhaps YOU also have Sizing and Finishing Problems!

BASED on an experience of over a quarter of a century in selling sizing to the textile mills, with representatives having spent many years in practical textile manufacturing, and with a completely equipped laboratory and specially trained chemists, the Frank G. North, Inc., organization has been able to advise and cooperate with many mills on their sizing and finishing problems with material savings to the mills.

We have these advantages to recommend us:

One of the most modernly equipped and economical plants for manufacturing sizing and finishing compounds in the country, located so as to render prompt service to Southern mills. Large enough to purchase crude materials at economical prices, with technical and practical knowledge to assure uniformly good quality. Small enough to avoid high overhead and to insure each mill's problems and requirements being given personal attention.

We are now serving over sixty representative mills throughout the South (names on request) and the number is increasing monthly. We will welcome the opportunity of consulting with you and demonstrating the superiority and economy of WEAVE WELL for sizing warps or FINISH RITE for finishing.

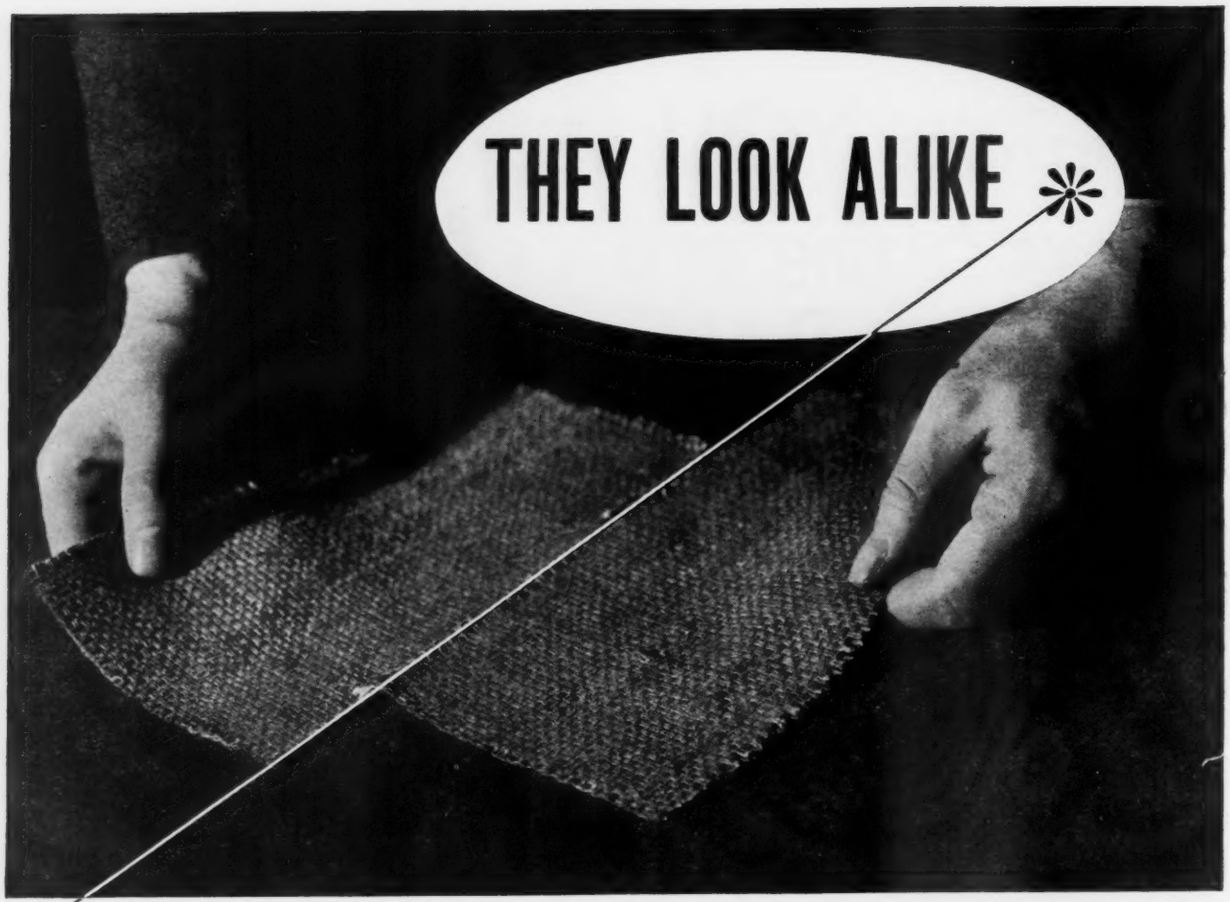
● SLASHING *WEAVE WELL* PRODUCTS ● FINISHING *FINISH RITE* PRODUCTS ●

FRANK G. NORTH, INC.

GLENN BLDG., ATLANTA, GA.

PHONE MAIN 3665

(PLANT AT MARIETTA, GA.)



but the buyer rejected one

A woolen buyer was examining bolts of material.

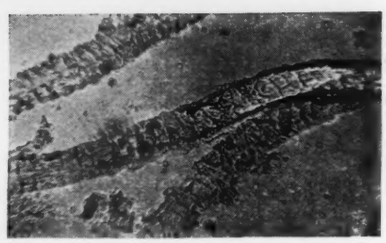
"Say, Charlie, this material is different. One sample hasn't half the quality of the other. Look closely at this one. The dye is duller. It hasn't warmth of color. And get the feel of it . . . notice that harshness? A microscope would show you that somewhere in your processing the fibres got gummed up. Now this other piece is a fine job."

"That's mighty interesting, John. You know the mill installed Permutit water treating equipment a while ago, and this improved material is the result of it. The old goods look pretty good, but you buyers sure can spot the improvement."

Would John find your mill goods inferior because of raw water supplies? Check up. See if suspended matter and dissolved salts are making trouble by clinging to the fibres in your fabrics.

Mill water must be properly coagulated, filtered, softened, and perhaps even further treated . . . to protect textile fibres. This was never so important as it is today, with new fabrics, different weaves and modern shades all requiring a higher grade of manufacturing technique.

Let our experienced engineering staff make a free analysis of water needs for your mill and show how process difficulties can be eliminated and costs reduced. First, send for our free booklet, "Reducing Textile Costs and Troubles." It's full of hard facts on textile problems. The Permutit Company. 330 West 42nd Street, New York City.



● Photomicrograph of raw water impurities clinging to wool fibres.

● Clean wool fibres, processed with properly treated water.

Permutit

Water Treating Equipment

Benefits to You!

When you buy Diastafor you get these definite benefits:

1. Uniform, always dependable sizing and desizing agent.
2. Constant tests by skilled chemists to maintain and wherever possible improve its quality.
3. Unimpaired service—delivered where you want it and when you want it.

When you consider that Diastafor has been the leading product of its kind on the market for 26 years, is it any wonder leading mill owners use it consistently year in and year out?

For full particulars, see our technical man or write to—

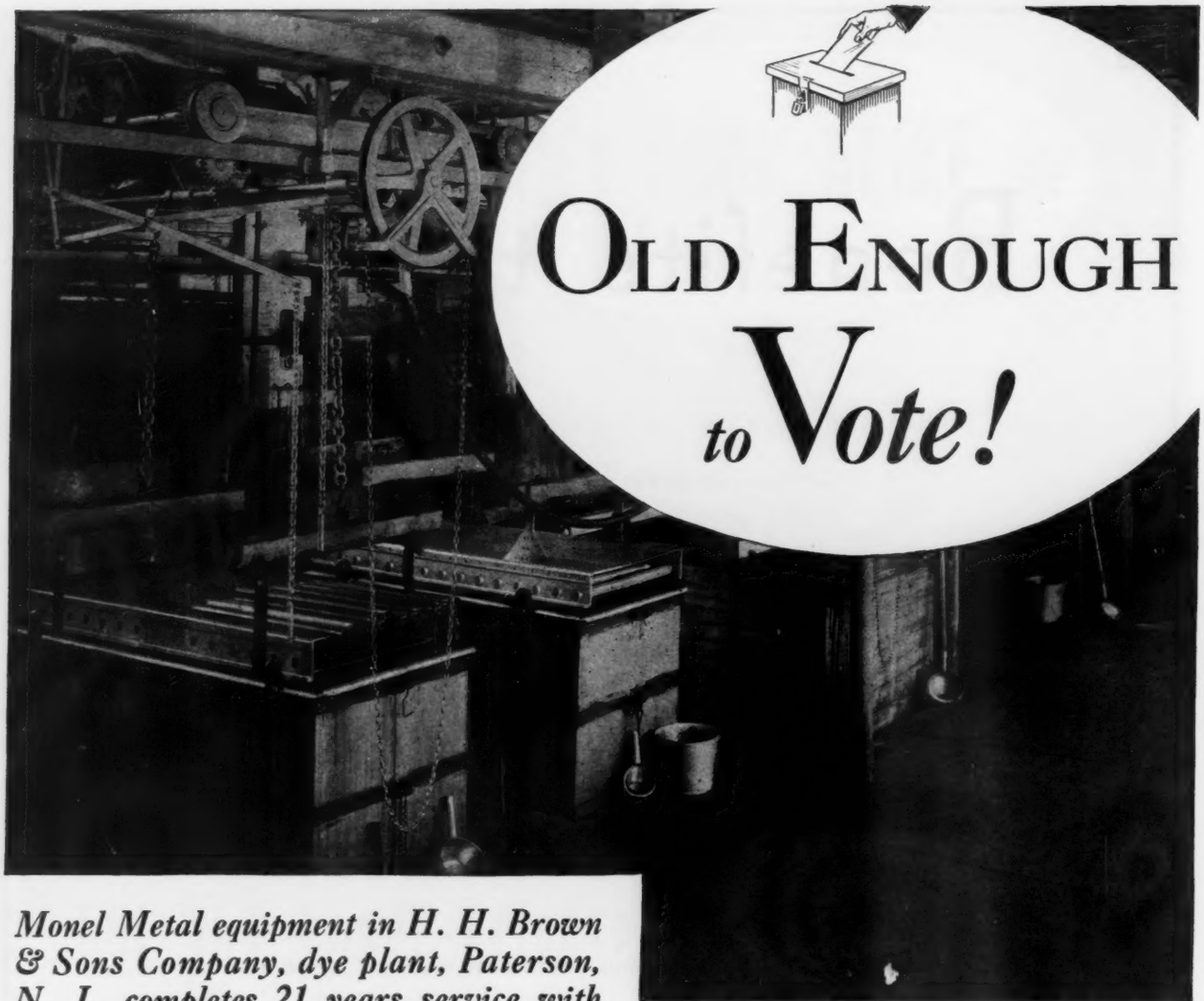
FLEISCHMANN'S

DIASTAFOR

DIASTAFOR DEPARTMENT

STANDARD BRANDS INCORPORATED

595 Madison Avenue New York, N. Y.



OLD ENOUGH *to Vote!*

Monel Metal equipment in H. H. Brown & Sons Company, dye plant, Paterson, N. J., completes 21 years service with little or no sign of wear

Some of the nine "Hussong" skein dyeing machines with Monel Metal tanks, cages, dyesticks, pails, dippers at plant of H. H. Brown & Sons Company, Paterson, N. J. "Hussong" machines are now made by Hussong-Walker-Davis Co., Philadelphia, Pa. All tanks and sheet metal work done by COLUMBIA HEATER CO., Paterson, N. J., and NATIONAL COPPER WORKS, Hawthorne, N. J.

DYEING equipment that is still good for indefinite service, after 21 years hard usage, certainly possesses characteristics worth knowing about.

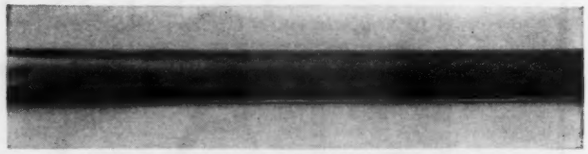
As for the endurance of the nine skein dyeing machines at H. H. Brown and Sons, Paterson, N. J., the reason is that they're made of Monel Metal.

For Monel Metal is strong as mild steel. It can take years of rough dyehouse treatment and still perform like new.

Yet even if Monel Metal equipment were not practically everlasting, there would still be sufficient reasons for using it.

First, it is absolutely rust-proof, resists corrosion, and assures true color dyeing with most dye-liquors. Thus off-tints, stains, spots, and re-dyes are avoided.

A further guarantee of true colors (which saves dyestuff in the bargain) is in the fact that Monel Metal does not absorb dyestuff.



Unretouched photo of one of their number of Monel Metal dyesticks after 21 years' use in the plant of H. H. Brown & Sons Company, Paterson, N. J. These dyesticks are still in good condition and fit for many more years of service

This also makes possible rapid changes from one color to another. No boiling out...just a thorough rinse between changes. Saves labor, floor space and produces *greater* output with *fewer* machines.

Monel Metal's hard, smooth surface protects even the most delicate fibres against damage by rough surfaces and splinters.

The sum total of all these Monel Metal characteristics is a *better* product at *lower* ultimate cost. So it is hardly surprising that besides dyeing machines, the Brown plant also uses a variety of other Monel dyehouse equipment—dippers, pails, racks, dyesticks.

Let us send you detailed information on Monel Metal dyehouse equipment. Write us today.

THE INTERNATIONAL NICKEL CO., INC., 67 Wall Street, New York, N. Y.

Monel Metal

Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

THIS LITTLE CREPE WENT TO MARKET

LOOK HERE JIM—THAT NOPCO RAYON SOAKING TREATMENT DOESN'T COST ANY MORE NOW THAN OUR OLD TREATMENT!
SWELL—LET'S TEST 'EM TOGETHER!
IF THEY CAN AFFORD NOPCO TEXTOYL 1111 AND SIZE #1 FOR YOU, I DON'T SEE WHY I CAN'T HAVE THEM
OH, THIS IS A TEST. YOU KNOW.."MAY THE BEST SIZE WIN!"
HURRAY FOR NOPCO! I'M THROWN AND I FEEL STRONG AND ELASTIC. SPINNING DIDN'T STRAIN ME A BIT!
GOSH, I FEEL SORTA STRETCHED OUT. I DON'T THINK I'LL CREPE UP RIGHT
HEY!—AREN'T YOU EVER COMING OUT? YOU'LL BE HARSH. I FINISHED MY BATH AN HOUR AGO
I JUST CAN'T SEEM TO CREPE UP. I FEEL LIFELESS AFTER ALL THIS BOILING ..WISH I'D HAD NOPCO TOO!
WHAT A LOVELY PIECE OF CREPE!
GUESS THEY'LL HAVE TO MARK ME DOWN TO SELL ME
A-HA! ANOTHER SALE FOR NOPCO

MORAL:

The best and most reliable treatment always gives the best and most reliable results . . . and now the cost of the Nopco Treatment has been reduced. Textoyl 1111 and Nopco Size No. 1 are best by test. Send the coupon for the NEW PRICES and our free pamphlet on Rayon Crepe Treatment.

NOPCO

Members of Throwsters Research Institute

NAME_____

COMPANY_____

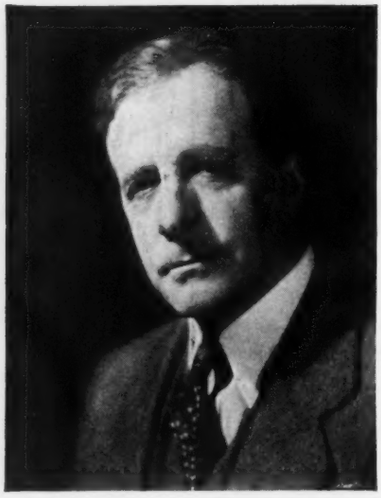
NATIONAL OIL PRODUCTS CO.

Harrison, N. J.

BOSTON CHICAGO SAN FRANCISCO

USE GROUP ANALYSIS AND PRESCRIPTION

He Achieves Wonders, But NOT ALONE



Who is he?—Any one of hundreds of brilliant American engineers who have performed seeming miracles of construction in the last half century. The Hudson Tube, numerous subways and suspension bridges, the Empire State building, streamlined railroad trains and motor cars and countless other Twentieth Century wonders attest to their abilities.

Why have these men made such tremendous strides in their field? Because they have learned the value of specialization plus group effort. The round table conference is an almost daily experience for them. They are unhampered by etiquette and inhibitions when seeking a broader or more intensive experience than their own with reference to any problem.

Textile plant chemists can follow their example with profit. Textile chemistry is such a complex and such a rapidly developing field, that no one man's experience in it can be entirely sufficient. The wise plant chemist is he who uses group analysis and prescription to solve his problems in the quickest and the most economical way.

Arnold-Hoffman Consultation Service supplies this modern need. We maintain a complete, up-to-date laboratory and a staff of specially trained chemists to assist the trade in solving new sizing and finishing problems and in periodical check-ups on the efficiency of routine methods. More than a century of contact with all branches of the textile industry gives us an enviable background for this service.

A-H Service is FREE to all users of A-H Products, actual or potential. Why not use it?

Arnold, Hoffman & Co., Inc.

Established 1815. Plant at Dighton, Mass.

PROVIDENCE, R. I.

New York - Boston - Philadelphia - Charlotte

CHEMICALS

Sizing Gums and Compounds - Soluble Gums - Softeners
Soluble Oils - Tallow - Waxes - Soaps - Flour
Dextrines - Starches - Pigment Colors and Lakes - Ammonia -
Acids - Blue Vitriol - Borax - Bichromate of Soda -
Bichromate of Potash - Liquid Chlorine - Chloride of Lime
Caustic Soda (solid and flaked)

SUPERIOR RESULTS

With No Risk

Your textile chemical manufacturer can supply you with a rayon boiling-off compound containing Yarmor Steam-distilled Pine Oil that has these superior advantages.

1. It removes the required amount of oils from rayon without affecting the strength of the fibers.
2. It makes possible the use of inexpensive and satisfactory mineral oils as lubricants.
3. It eliminates the necessity for corrosive materials which have a tendency to injure rayon.
4. It eliminates fuzziness and sleaziness.

Ask your textile chemical manufacturer about rayon boiling-off compounds containing Yarmor.

Steam-distilled Pine Oil
Steam-distilled Wood Turpentine
Wood Rosin
Alpha Terpineol
Commercial Abietic Acid
Abalyn
Nitrocellulose
Chemical Cotton

HERCULES NAVAL STORES

HERCULES POWDER COMPANY
INCORPORATED
995 Market Street, Wilmington, Delaware
BRANCH OFFICES . . . CHICAGO • NEW YORK
ST. LOUIS • SALT LAKE CITY • SAN FRANCISCO

OO-26

Assertive!—to be sure!—but quite apart from the skill of the designer and dressmaker, is the advanced art of **FINISH.**

Amazing effects of **FINISH** do follow the use of **ARKOL.**

To rayon, cotton, Celanese and pure dyed silks, **ARKOL** gives velvety softness—an unusually warm hand. There is no evidence of stickiness, no marking off, no staining of paper wrappers.

Additional to its economy, **ARKOL** is one of those tried and *proven* finishing agents that create fabric *par-excellence!*

ARKANSAS CO. INC.
233 BROADWAY NEW YORK

Use WATERPROOF W-559 *for water repellency*

● For spotproofing, rainproofing, splashproofing and showerproofing—in a single bath process, Waterproof W-559 is hard to beat.

This product makes a stable milky emulsion which gives exceptional results on all fibres—cotton, wool, rayon or silk. All fabrics can be made water shedding or completely water repellent.

If you prefer to use the wax and aluminum salts in preparing the waterproofing bath we suggest our ACETATE OF ALUMINA W-560, which is low in acidity and free from sulphate to be used in conjunction with WATERPROOFING WAX S-411A in a one-bath process.

FREE!—Write today for your free sample and specific directions.

- SPOTPROOFING
- RAINPROOFING
- SPLASHPROOFING
- SHOWERPROOFING

JACQUES WOLF & CO.

Manufacturing Chemists and Importers

Passaic, N. J.

Warehouses: **Providence, R. I. • Philadelphia, Pa. • Utica, N. Y. • Chicago, Ill. • Greenville, S. C. • Chattanooga, Tenn.**

For a More Complete Exhaust of the Dyebath Use

GRASSELLI *formic acid*

85% and 90% Commercial

ALWAYS UNIFORM *in Quality and Crystal Clearness*

● There will never be any danger of tendering delicate fabrics when the formic acid used in the dye bath is GRASSELLI GRADE. The careful, accurate chemical control used in its production insures an unvarying uniformity in quality, free from sulphates and chlorides. Its crystal clearness remains the same, never darkening when exposed to the light.

Although it is always mild and safe, GRASSELLI Formic Acid has the faculty of completely exhausting the dye. Being both an acid and aldehyde, it has properties not obtainable with other exhaust agents—producing more brilliant colors in dyed fabrics, with no streaky or cloudy effects, and always level colors even in cross dyeing.

Any Grasselli branch can supply you quickly.

GRASSELLI

LET US ALSO QUOTE YOU ON

Acetic Acid
Acetate of Soda
Acetate of Lead
Alums, U. S. P.
Aqua Ammonia
Barium Chloride
Bi-Chromate of Soda
Bi-Sulphate of Soda
Bi-Sulphite of Soda
Carbonate of Soda
Caustic Soda, Solid and Flake
Chloride of Lime
Chloride of Zinc

THE GRASSELLI CHEMICAL COMPANY
Founded 1839 INCORPORATED **Cleveland, Ohio**
New York and Export Office: 350 Fifth Avenue

ALBANY BIRMINGHAM BOSTON CHARLOTTE CHICAGO CINCINNATI DETROIT
MILWAUKEE NEW ORLEANS NEW HAVEN PHILADELPHIA PITTSBURGH ST. LOUIS ST. PAUL
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Represented in Canada by CANADIAN INDUSTRIES, LTD.
Acids and General Chemicals Division—Montreal and Toronto

GRASSELLI GRADE
A Standard Held High for 95 Years

GRASSELLI

LET US ALSO QUOTE YOU ON

Epsom Salts
Glauber's Salt
Lactic Acid
Muriatic Acid
Nitric Acid
Oxalic Acid
Phosphate of Soda
Silicate of Soda
Sulphate of Alumina
Sulphate of Soda, Anhydrous
Sulphite of Soda
Sulphide of Soda
Sulphuric Acid
Tri-Sodium Phosphate

BUNCHLESS

REG. U. S. PAT. OFFICE

AUTOMATIC CLEANER

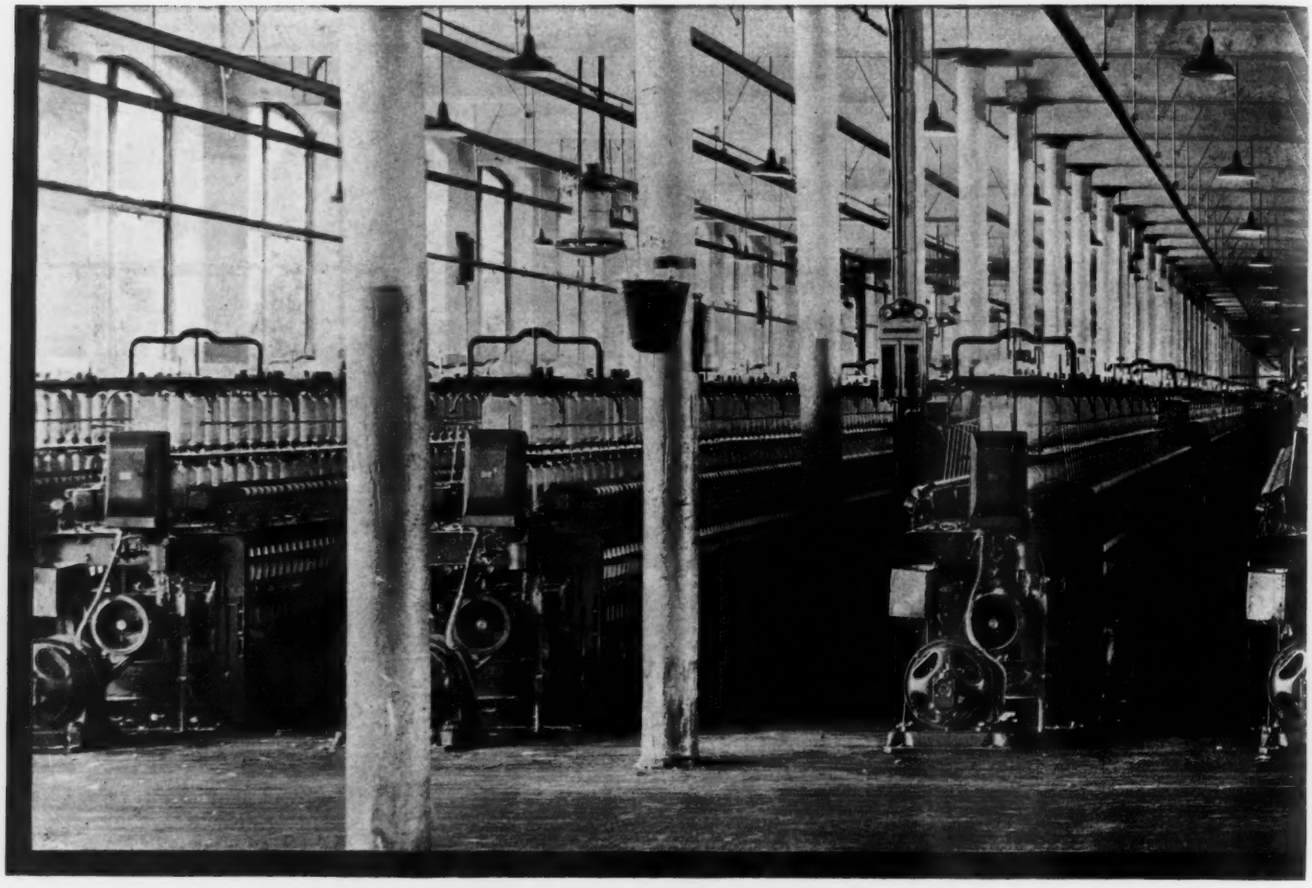
Wm. B. Walker
Sou. Rep.

UNITED STATES PATENTS

1930—No. 1,781,142
1932—No. 1,857,410
1932—No. 1,858,118
1933—No. 1,892,751

FIRTH - SMITH COMPANY

BOSTON, MASS.



206 MODERN SPINNING

ALL driven by Westinghouse

PICTURED above is the up-to-date spinning room of the Dwight Manufacturing Company, at Alabama City, Ala. In it are 206 modern long-draft spinning frames . . . each driven by a Westinghouse 10-hp. Lint-proof Spinning Frame Motor, with combination Linestarter, shipper-operated Master Switch and Cog-Belt Drive.

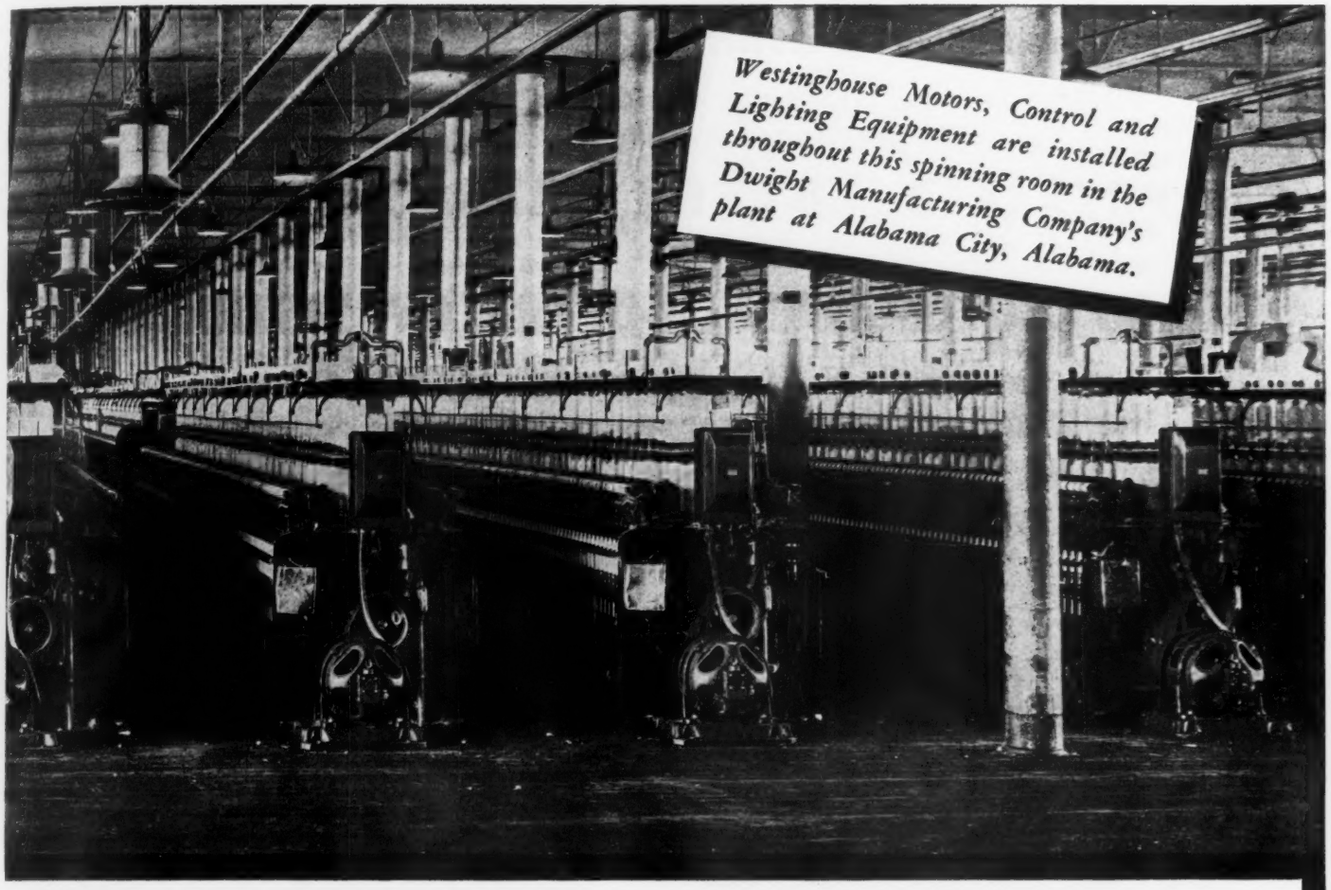
A majority of these motors have been operated somewhat above their normal rating, and the Dwight officials say that their performance has been most satisfactory.

Westinghouse

T 79949

Quality workmanship guarantees every Westinghouse product

W WESTINGHOUSE ELECTRIC



Westinghouse Motors, Control and Lighting Equipment are installed throughout this spinning room in the Dwight Manufacturing Company's plant at Alabama City, Alabama.

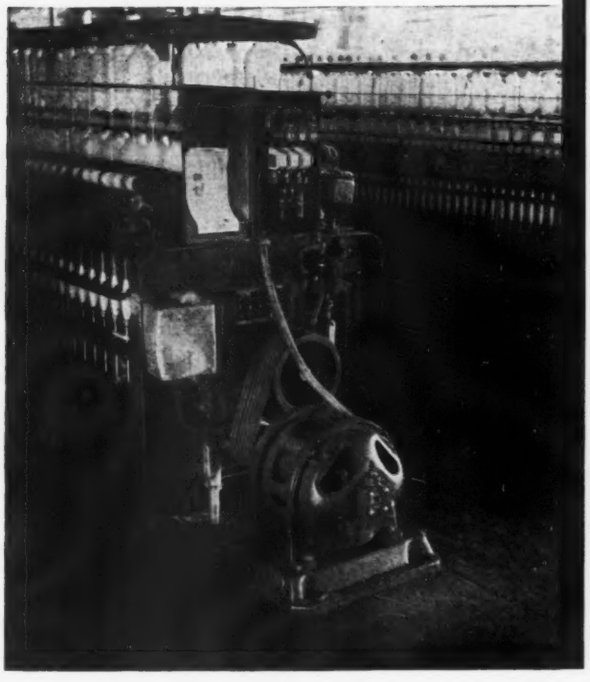
FRAMES

Equipment

Westinghouse Lint-proof Spinning Frame Motors are designed particularly to meet the conditions of the spinning room. The Sealed Sleeve bearings only occasionally require additional oil. They are dust-proof and oil-leakage-proof. The insulation is unaffected by the humidity of the spinning room. Large, unobstructed air passages and proper velocity of ventilating air prevent clogging by lint.

For complete information, call our office near you, or address Westinghouse Electric, Room 2-N, East Pittsburgh, Pennsylvania.

Complete Westinghouse Spinning Frame Drive in the Dwight Manufacturing Company's spinning room, consisting of a 10-hp. spinning frame Motor, combination Linestarter, shipper-rod Master Switch and Cog-Belt Drive.



The Dwight Manufacturing Company

Alabama City, Alabama, in their extensive modernization program, naturally selected the

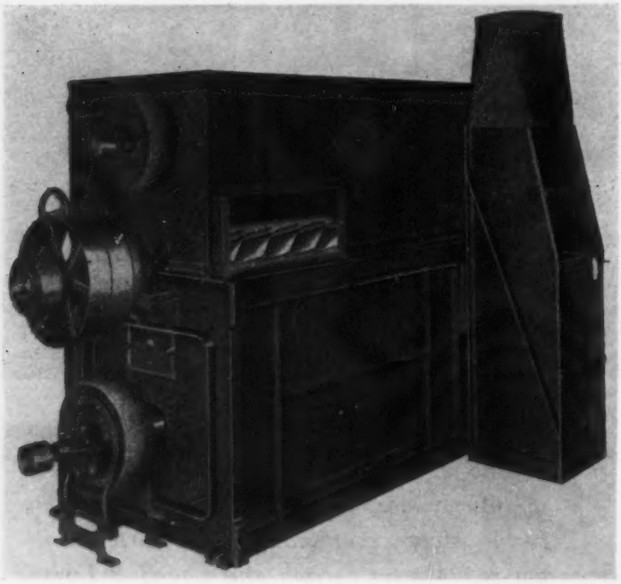
CENTRIF-AIR COTTON CLEANING SYSTEM

and

"CAMCO" AUTOMATIC NON-OVERFLOW DISTRIBUTOR

(with "G. E." Electric Cotton Control)

It is a further tribute to the advantages of this outstanding equipment, proven in every mill where it has been installed.



CENTRIF-AIR COTTON CLEANING SYSTEM

1.—Does more thorough cleaning than any other cleaning machine.

2.—Can be readily adjusted in the mill to exactly adapt it for grade and staple of cotton being handled.

3.—Opens and cleans cotton with absolute minimum of staple breakage or other damage.

4.—The only known machine in which cotton can open and bloom naturally as it is being cleaned.

5.—Occupies less floor space and requires less power than other machines.

6.—More heavily built, has a lower operating fire hazard and reduces upkeep cost of Pickers handling Cotton delivered by it.

"CAMCO" AUTOMATIC NON-OVERFLOW MIXING AND CLEANING DISTRIBUTOR with G. E. Electric Cotton Control.

1.—Mixes and blends cotton while conveying it.

2.—Takes out more leaf and fly from the cotton.

3.—Prevents spilling of cotton on floor.

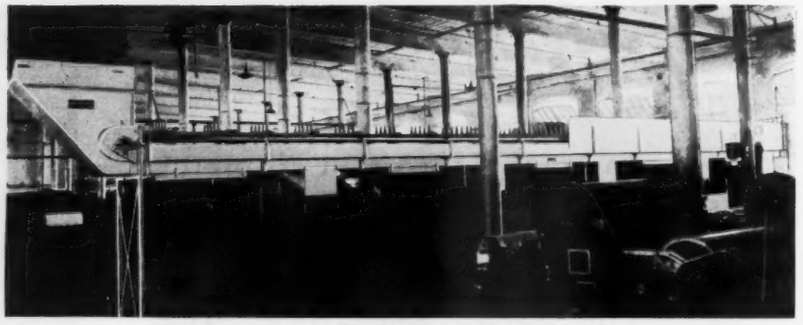
4.—Regulates flow of cotton from cleaning machines.

5.—Holds cotton at any desired level in the picker hoppers.

6.—Requires no attention while operating.

7.—Costs less for power and upkeep.

8.—Fitted with fireproof cotton delivery chutes in place of bags.



A few of the many other mills equipped with Centrif-Air Systems and "Camco" Distributors are:

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WEST POINT MFG. CO.
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MARTHA MILLS
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CROWN COTTON MILLS
RIVERSIDE & DAN RIVER MILLS

Without obligation, send for a Centrif-Air engineer and he will explain in detail, or write for more complete data. It will be mailed to you at once.

The CENTRIF-AIR MACHINE CO., Inc.

858 Ashby Street, ATLANTA, GA.

Vol. 98

COTTON

No. 5

May, 1934

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director
ROBERT W. PHILIP, Editor

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Published Monthly by

W. R. C. SMITH PUBLISHING COMPANY
Atlanta, Ga.

JOHN B. SHAW, *sales manager*, 39 Grove St., Auburndale, Mass. Boston Exchange, West Newton, 1031.
W. S. CUSHION, *vice president*, 506 The Arcade, Cleveland, Ohio.
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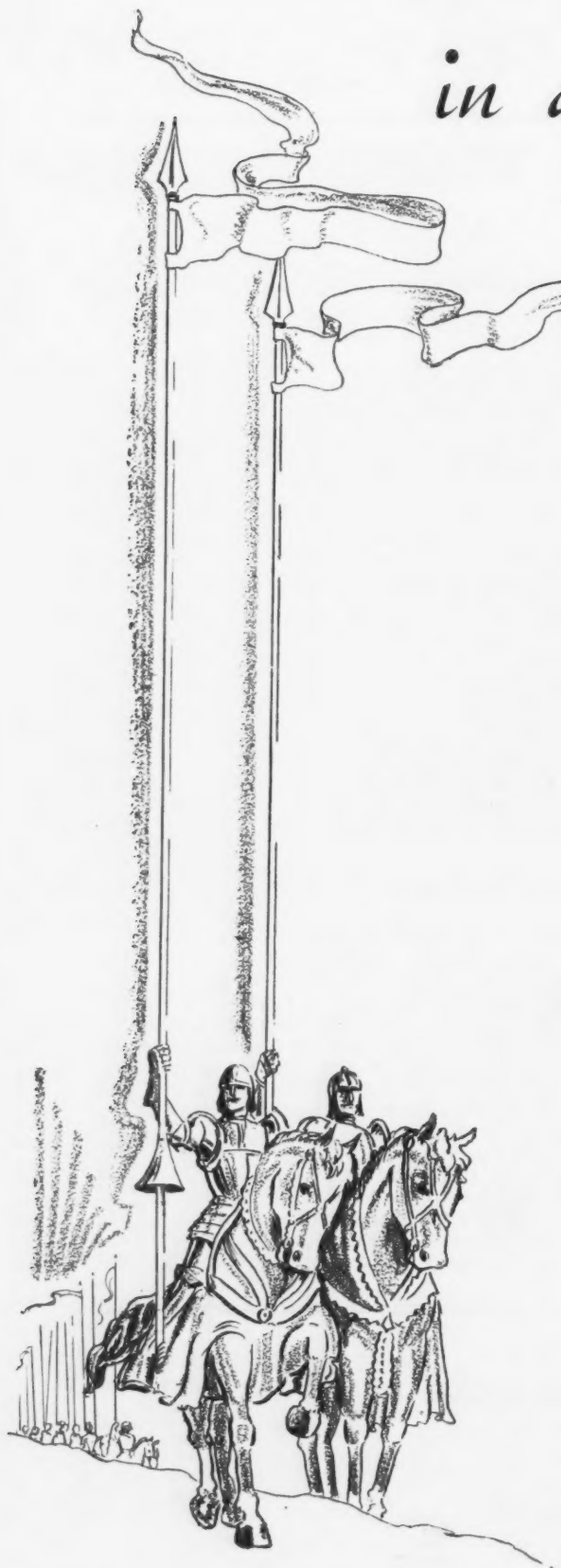

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DUL-TONE

Vol. 98
No. 5

COTTON

May,
1934

DWIGHT--a Study in Mill Modernization

By J. L. Truslow

HERE is the article you've been waiting for: a detailed description of what was done in the modernization program in the yarn manufacturing department of the Dwight Mfg. Co., at Alabama City.

Only one process of everything! 20s from slubber roving! Only six doublings in the whole mill! Truly an outpost on the farthest frontier of the spinning art.—The Editor.

THE word has gone around that down in Alabama City there is something new to be seen —a 60,000-spindle mill making yarn numbers up to 20s with only one process of everything. Single process picking and drawing we are getting used to, but single-process long draft roving in large scale operation is still a novelty worth going far to see. Another attraction at the Dwight is a spinning room which is the last word in long drafts, large packages, and high speeds for short cottons and waste. As a result of all this, those most hospitable executives, Messrs. Little and Cousins, spend a large part of their time acting as a reception committee for visiting mill men from all over the United States and even from foreign countries. As an example of the smallness of our modern world, it might be mentioned that an installation of long draft roving is going into a mill in the mountains of Colombia, South America, because its owner visited Alabama City.

For the benefit of those of our readers who like to get down to facts and figures right away, we can summarize in Table A the results achieved by the Dwight modernization program:

TABLE A

	1930	1934	Change
Spinning Spindles	76,084 old	59,868 modern	21.3% less
Roving Spindles	17,232	4,412	74.4 less
Drawing Deliveries	644	384	40.4 less
Cards	367	480	30.8 more
Pickers	39	15	61.5 less
Production per week	387,000 Lbs.	410,000 Lbs.	5.95% more
Hours per Week (see Note)	1.6 × 56	2 × 40	14.0 less
Operatives employed	1,725	1,364	20.9 less
Ave. Yarn No. Spun	9.79s	11.10s	13.4 finer
Lbs. per Spindle per 10 Hrs. (4 months averages)	.618	.808	30.8 more

Note: Spinning only—1.6 × 56 All other departments—2 × 56.

The goods produced by the mill, both before and after the changes summarized above, have been: osnaburgs, duck, drills, twills and narrow sheetings. A discussion of costs and profits has no place in this article but some of our readers may find interesting reading in the last three annual statements of the mill.

Now that we have a general idea of what Messrs. Little and Cousins have accomplished, we can go through their mill and study each department in detail.

Spinning: In 1930, the plant was equipped with obsolete band-drive spinning frames, most of them

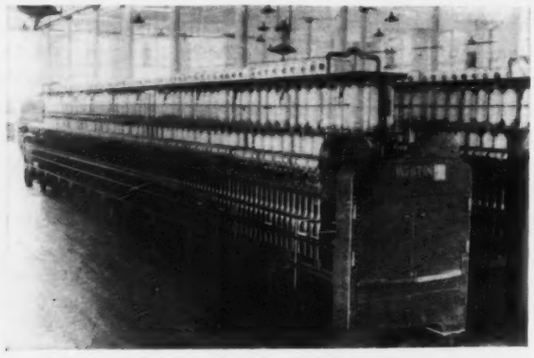
A general exterior view of Dwight Mfg. Co. plant, Alabama City, Ala.

An interior view of a part of the modernized spinning room, equipped with long-draft, individually-driven frames, overhead cleaners, etc. . . . . .

worn out by thirty-five years of operation. The gauge of the warp frames was 3-inch and that of the filling frames 2¾-inch. The ring diameters were 2-inch for the warp and 1⅜-inch for the filling.

These machines were no worse than those running in dozens of mills today, but Messrs. Little and Cousins had the vision, based on a careful study of the possibilities, to recommend that they be thrown out and replaced with modern frames. Mr. George Nichols, treasurer of the Dwight, approved the plan—an act of considerable courage in view of the business situation at that time.

45,740 spindles of old warp spinning were replaced with 32,640 spindles of new large-package type. This new machinery consisted of 136 frames, each of 240 spindles, 4-inch gauge. For yarns up to and including 9s, the 2½-inch ring was selected; from 9s to 15s, the 2¼-inch ring; for finer counts, the 2-inch ring. The



A close-up of one of the new Dwight spinning frames . . . . . .

wide gauge chosen allowed the operation of the frames at much higher speeds than were possible on the old machines. The large rings permitted the frames to run for a longer time between doffings. This not only reduced the doffing cost and the loss of production due to stoppage for doffing but, because fewer knots needed to be tied, reduced the cost of winding and cut down the number of warp breaks on the looms due to knots.

30,344 spindles of old filling spinning were replaced with 17,640 spindles of new machinery, made up of 70 frames, 252 spindles, 3¼-inch gauge, 1⅝-inch ring. In addition, 9,588 spindles of fairly modern spinning which had been running on warp were adapted to operate on filling.

All of the above machinery was, of course, built with tape spindle drive. This greatly improved the evenness of twist in the yarn produced, the change being especially noticeable in the filling. The spindle speed variation which, with the band drive, had ranged up to 500 r.p.m., became, with the tape drive, almost imperceptible.

All of the spinning, both warp and filling, was equipped with the Whitin-Casablancas long draft system. This enabled the mill to run much coarser roving in the creels of the frames, reducing the cost of roving preparation in the card room. This coarser roving was naturally made on larger bobbins which ran longer at the spinning, cutting down the cost of creeling and the number of roving piecings in the yarn. It was also found that short cotton, waste, and mixed staple ran much better on the long draft spinning than it had on the old three-roll system.

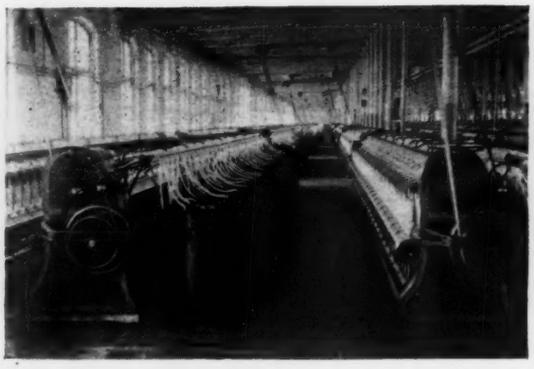
Each of the new spinning frames is equipped with individual motor drive and control of the Westinghouse lint-proof type, with v-belt.

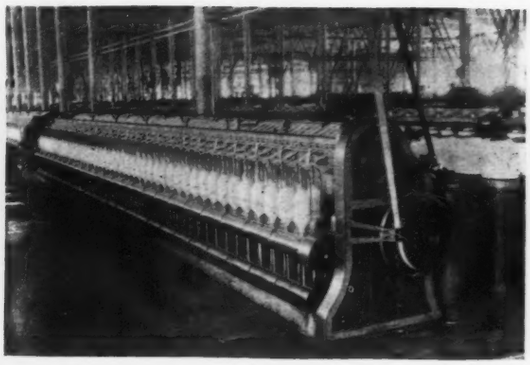
For a comparison of speeds, drafts, and hanks before and after the installation of the new machinery, the reader is referred to Tables I and II.

The mill fully realized the importance of proper humidification in the spinning room. An adequate number of heads was furnished and no less than ten regulating psychrostats to make sure of uniform air conditioning throughout the room. A percentage relative humidity of from 55 to 58 has been found to give best results.

With long drafts, high speeds, and short cotton, a good deal of lint and fly is naturally encountered. This situation has been much helped by the use of an overhead blow-down system which keeps the creels, deckboards, and roller-beams remarkably clean. The lint collects on the floor, where it cannot get into the yarn, and is taken care of by the sweepers.

Cork-covered top rolls are used on all lines, both on spinning and roving. These reduce lap-ups and eyebrows to a minimum and their long life reduces the mill's roller-covering cost. Paper-covered scavenger





Left, an alley of the long draft roving at Dwight; this equipment reduced the roving spindles by nearly 75 per cent. Right, a close-up of one of the roving frames . . . . . .

rolls are employed as they have proved to be easier and quicker to clean and are cheaper to maintain than the denim-covered type.

Roving: It will be noted from the summary at the beginning of the article that, before the modernization of the mill, the spinning ran only 1.6 shifts. This was because the roving machinery, which ran two full shifts, still could not produce enough to keep the spinning in full time operation. The fact that the mill was short of roving machinery to begin with, makes still more remarkable the feat of increasing the production while reducing the number of roving spindles by 74.4 per cent.

In 1930, the plant had the following:

12″ x 6″	Slubbers	3,040 spindles
9″ x 4½″	Intermediates	1,248 spindles
8″ x 4″	Intermediates	9,232 spindles
7″ x 3½″	Roving Frames	1,600 spindles
7″ x 3″	Roving Frames	2,112 spindles
	Total Roving Spindles	17,232 spindles

These have been reduced to:

10″ x 5″	Long Draft Slubbers	3,272 spindles
12″ x 6″	Short Draft Slubbers for Coarse Hanks..	1,140 spindles
	Total Roving Spindles	4,412 spindles

The long draft slubbers* are really intermediates in respect to the hanks which they produce. They make .90 and 1.00-hank roving from 65-grain sliver with drafts of 7.03 and 7.81. When the mill needs 1.20-hank, which it sometimes does, it is easily made on these machines with a draft of 9.38. An operative who used to run two intermediates, runs three long draft slubbers. This is possible because of the practical elimination of creeling. With such a fine hank being made, the can sliver runs out very slowly.

Careful tests show no difference in breaking strength and evenness between yarns spun from two-process roving and from long draft slubber roving. So far as the work running well is concerned, a 96-spindle slubber on 1.00-hank will average only 1.6 ends down per doff.

When one remembers that, only a short time ago, the roving long draft system was just a puzzle on a few experimental room spindles, it is very inspiring and encouraging to see the long rows of long draft slubbers stretching down the mill. It makes one realize that there is still room for new ideas in the cotton industry.

Drawing: Drawing processes have been reduced from two to one and the front roll speed cut from 314

(*) For a detailed description of the principle of long draft on roving, as installed in this mill, see "Long Draft Roving—a Pioneer Installation", by J. L. Truslow, page 23, July 1933 COTTON, reprints of which will be furnished on request.—The Editor.

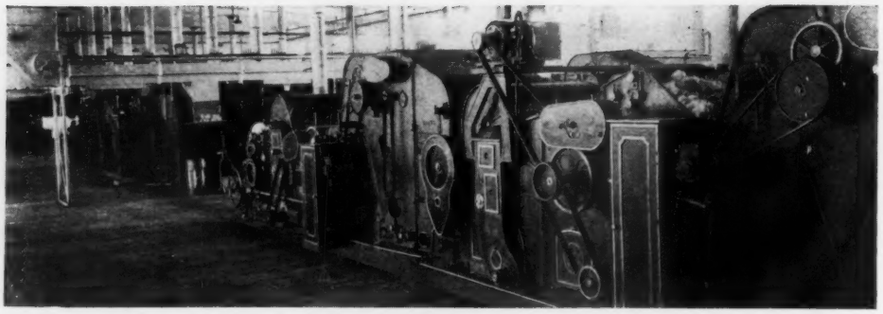
TABLE I—YARN DATA—OLD SPINNING

Yarn No.	Material	Hank Organization	Draft	Front Roll Speed
4.00 W	Cotton	.67 S	5.98	159 RPM
12.50	Cotton	.67-1.90 S	6.58	140 RPM
14.50	Cotton	.67-1.90 S	7.63	138 RPM
17.00	Cotton	.50-1.30-3.00 S	5.67	129 RPM
21.00	Cotton	.50-1.30-4.30 D	9.77	129 RPM
7.50 W	Waste	.63-1.30 S	5.77	142 RPM
8.00	Waste	.63-1.30 S	6.15	140 RPM
3.50 F	Cotton	.67 S	5.22	175 RPM
6.00	Cotton	.50-1.30 S	4.62	185 RPM
10.00	Cotton	.67-1.90 S	5.26	147 RPM
13.00	Cotton	.67-1.90 S	6.84	148 RPM
16.00	Cotton	.50-1.30-2.50 S	5.20	145 RPM
19.00	Cotton	.50-1.30-3.00 S	6.33	139 RPM
22.00	Cotton	.50-1.30-4.30 D	10.20	131 RPM
5.50 F	Waste	.63-1.30 S	4.23	142 RPM
7.00	Waste	.63-1.30 S	5.38	146 RPM
9.00	Waste	.63-1.30 S	6.92	144 RPM
		Average Draft	6.33	

TABLE II—YARN DATA—NEW SPINNING

Yarn No.	Material	Hank Organization	Draft	Front Roll Speed
4.62 W	Cotton	.90 D	10.26	191 RPM
6.54	Cotton	.90 S	7.27	182 RPM
8.92	Cotton	.90 S	9.92	186 RPM
13.60	Cotton	.90 S	15.10	164 RPM
16.91	Cotton	1.00 S	16.91	158 RPM
5.29 W	Waste	.63 S	8.39	176 RPM
7.98	Waste	.63 S	12.68	158 RPM
8.69	Waste	.63 S	13.79	149 RPM
10.40	Waste	1.00 S	10.40	157 RPM
3.75 F	Cotton	.70 D	10.72	187 RPM
5.24	Cotton	.70 S	7.48	179 RPM
7.50	Cotton	.70 S	10.70	190 RPM
8.45	Cotton	.70 S	12.08	199 RPM
6.98 F	Cotton	.90 S	7.75	198 RPM
9.26	Cotton	.90 S	10.30	187 RPM
9.75	Cotton	.90 S	10.71	177 RPM
11.80	Cotton	.90 S	13.10	183 RPM
12.56	Cotton	.90 S	13.95	175 RPM
13.69	Cotton	.90 S	15.20	167 RPM
14.35	Cotton	.90 S	15.95	170 RPM
13.09 F	Cotton	1.00 S	13.09	173 RPM
15.33	Cotton	1.00 S	15.33	166 RPM
16.80	Cotton	1.00 S	16.80	158 RPM
17.28	Cotton	1.00 S	17.28	142 RPM
18.31	Cotton	1.00 S	18.31	148 RPM
19.00	Cotton	1.00 S	19.00	143 RPM
5.51 F	Waste	.63 S	8.75	173 RPM
7.30	Waste	.63 S	11.60	174 RPM
8.25	Waste	.63 S	13.10	174 RPM
8.85	Waste	.63 S	14.02	156 RPM
		Average Draft	12.66	

Note: The average pound of yarn is drafted considerably more than would be indicated by the figure given above. The big production numbers are made with the highest drafts which will give best results. Numbers of which a smaller poundage is made are frequently spun with an unnecessarily low draft in order to avoid making an extra size of roving. It will be noticed how few hanks of roving the mill uses to spin a wide range of yarn numbers.



Showing the new picker room, with 2-beater single process pickers, rake distributors . . . . . .

r.p.m. to 213 r.p.m. The sliver produced is of satisfactory quality.

Cards: The additional cards were moved down from the idle eastern plant to give the mill the quality advantage of light carding. On cotton, the production is 10 pounds per hour. On the waste mix, it is 12 pounds per hour. 50-grain sliver is produced.

Opening and Picking: The opener room contains three independent units for blending, opening and cleaning.

The unit used for waste mixes consists of a traveling lattice apron fed by three tandem hopper feeders for waste and a single hopper feeder for cotton. The tandem feeders gently but effectively open the matted strips and a thorough blending is secured in the feeders and on the lattice apron. From the apron, the stock goes through two Centrif-Air machines in tandem and then to the picker room after passing through a Murray cleaner suspended from the ceiling.

The unit for short cotton is identical with the waste unit except that the lattice apron is fed by three single hopper feeders for cotton and one roving waste feeder.

The unit for slightly longer cotton is the same except that the apron is fed by four single hopper feeders.

The picker room contains one of the most modern single-process lay-outs in the country. It consists of three exactly similar units, each drawing cotton from one of the opening units described above.

Each picking unit is made up of a condenser and fan delivering to a rake distributor which, in turn, feeds five Whitin 2-beater single process pickers. Each of these consists of a hopper feeder 24-inch Buckley section with cages, intermediate feeder, 18-inch Kirschner section with cages, and calender section, making a 13⅓-ounce lap.

This total of 15 single process pickers supersedes the old layout of 18 breakers and 21 finishers. In other words, 24 machines have been eliminated and the quality of the laps improved.

Winding and Warping: In connection with the modernization program, the mill has installed a system of high speed winding and warping, consisting of 15 Universal winders, totaling 1,452 spindles. These machines feed 8 Saco-Lowell high speed warpers equipped with Universal creels.

The new warp preparation equipment takes the place of 28 old style spoolers and 33 slow speed warpers, and represented a saving in floor space of approximately 50 per cent.

None can leave the Dwight without a feeling of deep respect for the men who have transformed it from "just another mill" into an outpost on the farthest frontier of the spinning art. 20s from slubber roving! Our grandfathers would turn in their graves. Only six doublings in the whole mill! How do they do it? The answer is that they have bought modern machinery and operate it efficiently, and that they spend plenty of time checking, re-checking, and triple-checking those little petty details of operation which make all the difference in the world.

Railway Express and Western Union Join in New Shipping Service

Express packages are now being accepted at local Western Union telegraph offices or, on call by telephone or call box signal, will be picked up by telegraph messengers, as a result of a combination of services recently consummated between the Railway Express Agency and the telegraph company.

The principal objective sought by the new arrangement is to make the nation-wide transportation facilities of the Railway Express system more readily available to the public. This is being accomplished by establishing branch express receiving stations at Western Union offices so located as to provide the maximum of public convenience and accessibility.

Selected telegraph offices in cities and towns where the express company maintains collection and delivery service are being equipped for the receiving of shipments.

Telegraph messengers can be summoned by telephone to private homes and offices to pick up packages up to 20 pounds in weight and $250 in value. They are authorized to take shipments for forwarding by Rail or Air Express service; to accept them with charges prepaid or collect and to give receipts. There will be no extra charge for messenger service.

This added convenience to the public for forwarding packages will not in any way curtail the regular vehicle service of the Railway Express in any of the cities and towns where it has be introduced. Express trucks will still make regular collection and delivery of shipments, large or small, on scheduled calls or on request by telephone or other notification to the local express office.

The express company, owned by the principal railway systems of the country, operates over 225,000 miles of rail lines, maintains 23,000 offices throughout the country, uses 9,500 motor vehicles in the collection and delivery of express shipments and its air express system covers an air mileage of 13,500 miles.

THE BISHOP OF GEORGIA

A Word Picture and Brief Biography of the New President of the American Cotton Manufacturers Association . .

SOME fifty years ago, residents along the sparsely settled red clay road winding through the hills of North Georgia into Marietta saw a lanky country lad treading along, his bare feet kicking the red dust, his face lifted and chin extended in determination and eagerness. He had bid farewell to a devoted aunt, whose home, eight miles from Marietta, had been his home since the death of his mother some eight years before, and was walking to Marietta, to take up abode with his father, a distinguished minister of the Methodist church, who had just returned to the town from whence he had entered the ministry after a brief, successful career in the legal profession.

The lad's physical equipment was that of the average, healthy youngster of the day, but his intangible possessions included, along with a keen power of observation and an eagerness for facts, a rich background of ancestry.

So it was that William Dickson Anderson, now of Macon, Ga., who has just been elected president of the American Cotton Manufacturers Association, passed an important milestone in a life that has been filled with study, achievement of purpose and accomplishment. Receiving now, from his fellow southern cotton manufacturers, the highest honor within their power as a body to bestow, he attains another milestone, a tribute to a record of accomplishment and a timely recognition of the industry's need, in an official position, of the force and ability of the man.

Underwood & Underwood photo

It is the purpose of this sketch to record briefly the developments between these two events in the life of Bill Anderson; to delineate the development and influence of a dominant personality. In so doing, it is interesting to search the ancestry of the man, the dominant strains of character prevailing in his ancestors and their summation in him and his personality; and to follow the personality in its development through the environmental influences that have touched it. For beyond peradventure, Anderson reflects as a mirror his antecedent influence and that of at least two of his associates, his father, and another, as will be revealed later in this story.

Anderson was born on a farm seven miles north of Marietta, Ga., on July 9, 1873, the son of the late W. D. Anderson and Louisa Latimer Anderson. The Latimer ancestry dates back to the days of William the Conqueror, who granted a patent of nobility to the first Latimer of record, which patent is now preserved in Venice. Bishop Latimer, who, with Ridley, was burned at the stake—the first Christian martyrs in England—is claimed in the ancestry of the family.

Three Latimer descendants came to America, settling in Virginia. One branch of the family was associated with Lord Baltimore in his administration of the colonies, and another of the brothers married the daughter of Lord Fairfax. One of the Latimers settled in South Carolina and there were three descendants, brothers, who removed to Georgia: Dr. Harrison Latimer, a physician; Wylie Latimer, who settled about seven miles north of Marietta; and Reuben, who established a gin and flour mill near Woodstock, Ga. Anderson's mother was the daughter of Dr. Harrison Latimer.

His paternal grandfather was Judge George D. Anderson, of Decatur, son of James Anderson, pioneer surveyor. He was married to Miss Jane Dickson of Chattooga County, and served for years as judge of the Blue Ridge Circuit, when that circuit extended from Decatur to the Tennessee line, dying at Spring Place while holding court there, at the age of 36.

Anderson's father was a student at the University of Georgia in Athens when the Civil War broke out, and along with three friends, J. B. Glover, William Davis, and W. R. Montgomery, all fearing that the war would end before they could get into it, left school and joined the South Carolina Palmetto Guards, reaching the scene of action in South Carolina immediately after the fall of Fort Sumter. Upon leaving the University, to which he had returned, Anderson Senior was admitted to the bar. Practicing in Marietta, he served brilliantly for his state in the Georgia Legislature during the reconstruction days; was noted for his lofty ideals, his broad and comprehensive grasp of the problems confronting the country during this turbulent period, and for his unswerving devotion to duty. These qualities added to his forensic eloquence and his rare talents as a *raconteur* drew a host of friends and admirers, so that it is recorded of him that he never asked a man to vote for him for any office during his entire political career.

Two years after the birth of William, the subject of this sketch, his mother died, and in the period of travail and sorrow, his father relinquished a successful law practice and offered himself to the North Georgia Conference of the Methodist Episcopal Church, South, for service in the ministry. Young Bill grew up in the home of his Aunt Jane Latimer, his father's sister, an exceptionally well educated

woman for that time, who had married James Latimer, a son of Wylie. She taught him privately until he was eight years old, when he entered his first school at Briar Patch, Gritter Militia District, near the farm of his aunt.

When Bill was ten years old, his father had married again and had become pastor of the Methodist church in Marietta, and desired his son to come back into his family so that his education might begin under his own guidance and companionship. Thus the trip, by ankle express, with which this story started.

Bill soon matriculated at the Marietta Male Academy, where his teacher was Professor J. C. Harris, now head of the School for the Blind, at Cave Springs, Ga., and the father of George S. Harris, well known textile man.

The families of Methodist ministers, back in those days were, as now, accustomed to frequent changes of residence. When Bill was 13 years of age, his father was transferred to the First Methodist Church at Athens, Ga. Bill was below the age limit of entrance at the University, and received private instruction under Professor E. C. Kennibrew until the fall, just after he was 14 years old in July, when he entered the University. He was one of the youngest men to have been graduated at the University, completing the course in June 1891, before he was 18 in July—the first honor graduate in his class. This, incidentally, afforded a tangible result of a thought which his father had indelibly instilled in young Bill's mind: that there is but one place for a man who wishes to succeed, and that is first place. He retains that philosophy today, with particular reference to the concern which he heads.

The most obvious outlet for trained ability in those days was the profession of teaching school, and Bill secured a place in Weston (Webster County), Georgia. After a year there, he took a school at Waynesboro, and while there, took up the study of law. The next year he went back to Marietta, to which the conference had again returned his father, this time as Presiding Elder, and finished his law studies "reading law" in the office of a cousin, R. N. Holland, and was admitted to the bar before he was 20 years of age.

Arrow indicates Anderson as manager of Marietta baseball team, 1894 . .

His father, noting Bill's insatiable desire for knowledge in his newly chosen profession, saw that his arduous reading was affecting his eyes. Holding up that same mark—the only place worth working for is first place—he reminded the budding jurist that to be a successful lawyer "You will have to study from morn 'til noon, from noon 'til dewy eve"; that with a strained eyesight, something short of first place must satisfy; and suggested that he enter the business world. Young Bill then started to work in a paper mill on Soaps Creek, in Cobb County, which also manufactured machine waste, cotton batting, etc., and soon became superintendent; and here another milestone appeared. Major J. F. Hanson, one of the organizers of the Bibb Manufacturing Company, and at that time its head, became interested in the plant where Bill was "super", and the Bibb organization was chosen as its selling agent. Major Hanson asked Bill to meet him in Atlanta one day to discuss a contract with a customer, and later he went on a western trip, selling the products of the mill. That he was eminently successful both in handling the transaction in Atlanta, and disposing of the mill's product in a sales capacity, was apparent from subsequent developments.

Meanwhile, however, a member of an Ohio family had become interested in the mill on Soaps Creek, and young Anderson, dissatisfied with policies that later demonstrated his good judgment in disagreeing with them, applied to Major Hanson for a position with The Bibb, and apparently the Major had been thinking along the same lines, for very promptly a connection was made; thus it was that Bill Anderson joined forces with The Bibb, subsequently becoming its president and chairman of the board of directors, the position he now holds.

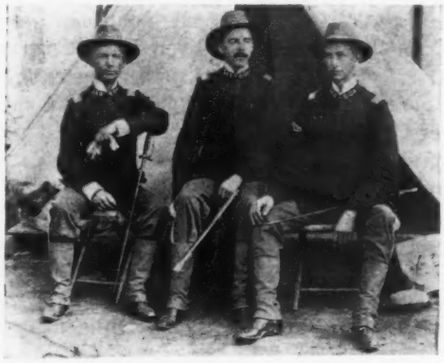
Reverting somewhat to earlier—and very important—history in the case, Reuben McKinney, who was residing on the Etowah River north of Marietta, had a daughter, Linda. Bill's Aunt Jane took him, when he was about eight years old, to visit the McKinneys, and it was there that he met this young lady, who later became Mrs. Anderson. Thirty-eight years ago, the newlyweds removed to Macon, where Bill began his work with The Bibb, as a traveling salesman. The day following the birth of their first child, a daughter named Linda for her mother, the proud father left Macon on an eight-weeks' trip to New York, selling for the Bibb. (The daughter, Miss Linda, is now Mrs. McKibben Lane, of Macon. W. D. Anderson, Jr., the other child, is now vice-president in charge of sales for The Bibb.)

The history of the Bibb Manufacturing Company during the present century has been so closely intertwined with the progress and development of Mr. Anderson, and his own growth so linked with it, that at this point in the narrative it becomes difficult to separate them. The company was formed in 1876. It has the distinction of being one of the pioneer companies in the industry which throughout practically its entire life has controlled the selling of its products, and this practice is continued to the present day. It was formed by Major Hanson, in association with H. M. Comer of Savannah, whose brother, E. T. Comer, later became head of the organization and played such an important part in the business life of W. D. Anderson. Starting with a small plant of approximately 2,500 spindles in 1876, it has grown soundly to its present physical equipment of 260,000 spindles and approximately 2,500 looms, with eight

plants in four Georgia towns, providing livelihood for 7,500 employees and their families; it is famous for its modern practice, its villages, its progressive, sensible program of social service work and religious activities which, captious critics to the contrary notwithstanding, have put into the organization the spirit that finds expression in the term by which high executive and humble employee in the organization prefer it to be called: The Bibb Family.

But this is a story, not of the organization, but of the man who actively heads it, in every sense of the word.

During his early years with The Bibb, young Anderson literally traveled the country from coast to coast, as salesman. This experience undoubtedly provided him with a broadened point of view and understanding which he, always the student, added to the foundation laid in his earlier business and professional career and in the wonderful training of his father's influence. It wasn't long, with The Bibb making rapid progress, until Anderson was located in the general office, still in the sales end—and, parenthetically, he is still very much in it today—and his aptitude, thoroughness and devotion to a task soon attracted the notice of the late E. T. Comer, then head of Bibb, and before he realized it, young Bill was shouldering more and more responsibility handed to him by that Nestor of Georgia industry. Mr. Comer, himself possessed of a massive intellect, a prodigious ability for work, an uncompromising sense of duty, directed the organization with authoritative direction, and found in young Anderson an apt disciple. So expertly was the rigorous training absorbed, that it was a natural sequence that, upon the retirement of Mr. Comer, who had become chairman of the board as well as president of the company, in 1913, Mr. Anderson succeeded to these positions, which he has held since. Mr. Comer impressed so indelibly upon his successor his philosophy, methods and business practice that even now Anderson frequently uses as a yardstick, in making a decision, the subconscious thought: what would Mr. Comer do about it?—and if he can find the answer and will apply it, usually finds it pretty nearly correct.



In camp with the Georgia Militia: Anderson, 2nd lt., at right . . .

The central figure is Capt S. V. Sanford, now president, Univ. of Georgia, Athens . . . . . .

Thus, chronologically, the history of the man. His methods, his philosophy, his actions, afford an insight into his dominant characteristics. As an executive, he is commanding as befits the tremendous responsibilities of his position, firmly devoted to the interests of his company. He maintains a self-imposed and natural punctuality and regularity in his work; his office associates frequently find him in his office when they arrive, and leave him there in the evening. When he is in Macon—which is more regularly than might be assumed in view of the enormous demands made upon his time by outside interests—he reviews each morning the company mail, not out of a sense of curiosity, nor in the thought of "checking up", but in order that his active mind might keep up intimately with the daily activities, the progress and growth of the Bibb family. As a matter of fact, one of Anderson's chief abilities as an executive, in his own organization and in his other activities, lies in a knack for selecting competent aides, assigning a job, and giving the man authority to execute commensurate with the responsibility.

His intense application to a rigorous office schedule in no sense means that Anderson hampers himself with useless detail. He is a careful, deliberate, painstaking workman, who does a thorough job, whether it be the disposition of a routine matter, or the settlement of an important policy or contract. Haste has no part in his deliberations, no one has ever been known to hurry him nor to precipitate a premature decision from him. But this trait of thoroughness does not develop into delay or uncertainty. He draws upon an astute judgment that is strengthened by broad study and experience, and has generally considered every phase of a matter before reaching or expressing an opinion or decision; and hence, once a conclusion is attained, he is unmoved by arguments based on less thorough considerations.

Thus the juristic influence of his paternal ancestry and heredity, and his own early training are coupled with a remarkable analytical power. So thorough and careful himself, he is likely to exhibit impatience at an opinion unsoundly formed, and this has been incorrectly construed as reflecting an arbitrary point of view; whereas, to the contrary, he is most reasonable in dealing with a differing viewpoint when it displays the result of careful thought and study in its formation.

Adopting the organization's own terminology, the head of a family must govern with authority and firmness, to secure effective results; tempered with fairness, justice and tact to maintain and develop an *esprit d'corps*. That Anderson measures up to these responsibilities is clearly revealed in the spirit of respect and effort that permeates the entire organization. Fundamentally, the members of the Bibb Family have caught the spirit of its head, each contributing his part to the interests of the whole. That explains, perhaps better than anything else, why the organization as a whole is growing year by year stronger economically, socially and spiritually.

This Family is one of Anderson's paramount interests. His honest conception of the true purpose of the Bibb organization is to build citizens. Financial success of the corporation is essential, to be sure, that this aim may be achieved—and eminently successful Bibb has always been. But personally, Anderson manifests a deep, abiding concern for the enrichment of the lives of the thousands dependent upon the concern which he and his associates direct, for their spiritual,

intellectual, and mental development. To this work, in all of its phases, the head of the Family gives a sincere devotion and unstinted work—in the sound belief that his chief responsibility is to provide for them the best means possible for their progress and self-development.

Anderson is one of the really great platform speakers of the industrial South. Equipped with a broad, cultural background, he expressed himself vividly and potently. He has a fund of classic stories and anecdotes from which he draws frequently to illustrate a point, in an address and in personal conversation. So great is his ability as a *raconteur* that it ranks equally with his forensic art. He is always at home on the rostrum, whether it is building a case before a Congressional committee, a board of regents, an organization of workers, or his own board of directors. His platform presence combines the legal and the ministerial; he is a strong, dominant personality, and his addresses are logical, convincing and effective.

It is but natural that so conspicuously successful an industrial leader should be sought in projects of an outside nature. To every worthy demand, particularly if it involves social, industrial, educational or spiritual progress, he gives unsparingly of his time and abilities. He is a trustee of Wesleyan College, and headed the successul movement of several years ago to expand the facilities of this, the oldest college for women in this country, into the magnificent plant it now occupies on the outskirts of Macon. He is a trustee of the University of Georgia, and in 1932 was the chairman of the Board of Regents formed for the re-organization, integration, and operation of the school systems of the state. His organizing ability, executive leadership and complete devotion to the task enabled him to lay out this program with sufficient rapidity that he retired from the board within six months, turning over to his successor an efficient, sound and non-political procedure.

By way of avocation, Anderson is a dirt farmer, operating a large farm in Cobb County which consists largely of property which had been in the Anderson and Latimer families. One inviolable engagement of his is a reunion of the Anderson-Latimer clans, at Noonday Church, on the last Saturday of each July.

Fishing, usually at the Satilla River Fishing Club in South Georgia, represents largely his only recreation—and so strictly does his interest and love of work hold him to his duties that he doesn't go there nearly as often as he should, to benefit from the relaxation and diversion which it provides. His "extra-curricular" activities at home are practically non-existent; he finds much relaxation in the good old-fashioned practice of sleeping; he retires early and enjoys, usually, a Saturday afternoon nap in relaxing from a strenuous week of activity.

Personally, Anderson typifies the distinguished southern gentleman that he is; with a stalwart, neatly attired physique, and a strong handsome face which impresses the casual acquaintance or business associate as stern, austere, dominating. His friends in the councils of the industry, such as the NRA Code Authority, refer to him as The Bishop of Georgia, which brings to mind the story of a distinguished southern churchman who approached the shoe-shine stand of a Mississippi negro boy. After greeting his customer successively as "Cap'n," "Colonel," and "General," and being told he was in error each time, the dismayed boy finally asked, "Then what is yuh?" "I'm a Bishop," was the reply. "Yas suh, Bishop, yas suh," the boy replied. "Have a seat. I knowed whatever it wuz, you wuz the head of it."

Anderson is considered by some as imperious and exacting. If that is meant to imply that he expects nothing short of the best—in a person, a project or a trade—it is true, but he asks no more than he himself can and does give. He simply will not render a shoddy job, nor can he be satisfied with one from another.

But beneath a stern exterior is an intensely human and emotional warmth and feeling which, once discovered and deserved, is expressed with a characteristic sincerity and constancy. In making friendships, Anderson seeks the real things; he is not in the least impressed by outward demonstration, and is just as impatient with artificiality and insincerity as with inefficiency.

So positive and strong a character, one who seeks and finds the fundamentals of an issue and is guided into aggressive action by his true convictions, naturally has his critics and his adversaries, but none of them, while disagreeing with his policies, can doubt his honesty, sincerity or integrity.

The ramified activities of The Bibb, with which he actively concerns himself, consume about all of Anderson's time. He has no other active business connections—but is a director of the Central of Georgia Railroad and of the Citizens and Southern National Bank of Macon. He is a member of the Macon Rotary Club, which he has served as President, and an honorary member of *Phi Psi*, the National textile fraternity, and a member of Phi Beta Kappa.

Anderson is a deeply religious and spiritual man. He is a member of the Vineville Methodist Church in Macon, where as a trustee and chairman of the apportionment committee of the board of stewards, he gives the same fine and sane leadership manifest in all his business transactions. He and Mrs. Anderson and their son, and their daughter's family, occupy the first and second pews of the church on Sunday mornings.

Despite a record of prodigious activity and accomplishment in the common weal, Anderson has never sought nor held public office. Outside of his membership on the Cotton-Textile Code Authority, and the board of directors and executive committee of The Cotton-Textile Institute, he has not previously held official title in the industry of which his organization is so important a factor. This chronicler believes he has accepted his new responsibility as head of the American association in the realization of the opportunity it provides for service to his industry, under unprecedented conditions; that the industry is signally fortunate in securing his force of action, soundness of judgment and effective ability, to direct its combined activities at this particular time.

Uses and Applications of Enzymes in the Finishing of Piece Goods

By J. Andrew Clark

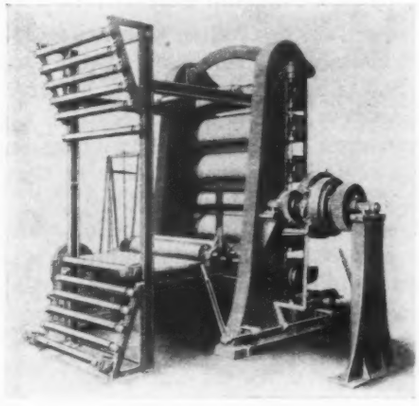
HERE Mr. Clark continues his series on the basic raw materials used in the finishing of cotton piece goods. In this, the tenth article in the series, he covers the subject of Enzymes, describing them and their various applications in cotton finishing . .

THE USE of enzymes in industry has been firmly established and seems to be capable of wide application and extension. In the cotton industry, their use is restricted mainly to the solubilizing of starch, while a new process of silk de-gumming, based on the application of enzymes, is receiving some attention. A consideration of their functions and properties leads to the conclusion that they are organic catalysts of protein nature. Catalysts are substances which bring about or accelerate chemical change without forming a part of the end products of the reaction.

The enzymes themselves are produced by cells of plant or animal life and may be either intracellular or extracellular; the latter consisting of types excreted from and which function outside the cells. This latter type is of most importance, because of the difficulty of obtaining the former. The chemical composition of these products has not been determined satisfactorily, although it is commonly accepted that they are, in general, proteins, celloidal, generally soluble in water and dilute salt solution with the exception of a few fat ferments. They are readily absorbed by other colloids and solid particles, while alcohol or concentrated ammonium sulphate will precipitate them from solution. The enzymes are, moreover, relatively unstable, gradually losing their activity on exposure to light, especially so in the case of ultra-violet. The activity of these products is greatly influenced by temperature conditions. The optimum for most types ranges from 35 degrees to 50 degrees C. with action ceasing at 0 degree. Boiling temperatures kill them almost instantly, as do strong acids or alkalies. The presence of small amounts of acid or alkalies may be necessary with some types, the pH of the solution for best activity depending on the particular enzyme. Pepsin, a protein digesting enzyme, is employed in dilute hydrochloric acid solution for instance, in clarifying fish scales for making pearl essence.

A peculiarity of enzyme action, however, is that many of the reactions promoted by them are reversible to some extent. An example of this is shown by the reaction of maltase in converting maltose to dextrose proceeding to an equilibrium. Yet if this enzyme maltase is added to a solution of dextrose of the same concentration as above, the reaction proceeds to the identical equilibrium established by the first reaction.

From a consideration of their characteristics, enzymes can be divided into two general classes. The first of these, hydrolytic enzymes, characterized by the addition or removal of water, while the second promotes oxidation or reduction. In either case, they are nevertheless specific in action in that a given enzyme will only act on one compound or group of compounds. The enzymes of major importance in processing cotton are those employed for solubilizing starch and are members of the first group. The first group includes esterases or lipases, capable of splitting esters and fats; carbohydrases which split carbohydrates; amidases and proteases which break down or digest proteins and like compounds and the



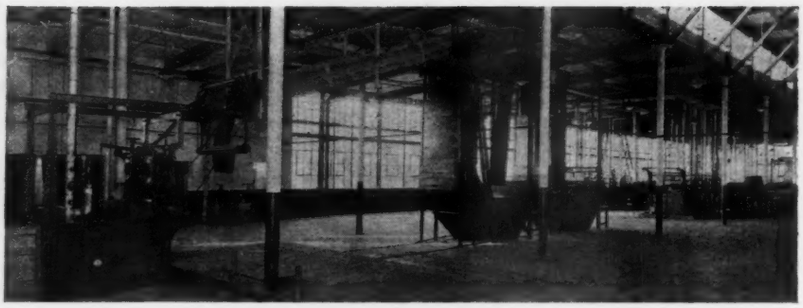
Photos, courtesy H. W. Butterworth & Sons Co.

A six-roll hydraulic chasing calender especially adapted for broadcloth

coagulases which bring about coagulation of proteins and other organic substances in solution.

Of these, the amylolytic or starch solubilizing enzymes are of major importance in cotton processing. While the application of other enzymes has been advocated, such as for instance, the removal of proteins from grey cloth to eliminate the necessity of kier boiling, their use has not as yet become practical for cotton treatment, although showing promise in other textile fields. Amylolytic enzymes may be obtained from several sources and they fall into two general classes, viz., liquefying and saccharifying. The liquefying amylases are characterized by their high capacity for liquefying raw starch and by their relatively poor saccharifying or sugar-forming properties. The saccharifying amylases convert solubcomparatively low liquefying action on raw starch. ilized starches and dextrines into sugars but have a

comparatively low liquefying action on raw starch. Some of the commercial enzyme preparations contain both types of amylase. One commonly used type, malt diastase, is produced by the cells of barley seed in germinating and is obtained by extraction with water. Vegetable types are produced by the actions of moulds and bacteria, while animal diastases are secreted by the pancreatic and salivary glands and are obtained from slaughter houses for industrial application.



A malting machine for saturating goods before boiling or bleaching

It is not proposed in this article to enter into a discussion of the relative merits of the various commercial diastatic preparations, either in relation to the conditions of optimum activity or starch converting power. It is well to point out, however, that the various diastatic enzymes operate most efficiently at somewhat different hydrogen-ion concentrations and temperatures and that deviations from these values by even relatively small amounts, especially in the former, seriously affect this efficiency, while excessive temperature produces a lethal effect. Generally speaking, the malt preparations are most active in slightly acid solution at a pH of 5, and with the optimum temperature range of 122 to 145 degrees F. Another widely sold vegetable type acts in neutral or faintly alkaline solution most actively at approximately 158 degrees F., while pancreatic diastase reacts most actively with a pH of 7 at temperatures within the range of 104 to 122 degrees F. One preparation containing a liquefying amylase is applied in solubilizing raw starches at temperature of 180 degrees to 185 degrees F.

With some types, the presence of certain salts promotes activity and helps to maintain stability of the enzyme, while the addition of penetrating agents is of advantage since the enzyme must come in contact with the starch before solution can proceed.

The Amylolytic Enzymes in Finishing

The application of the amylolytic enzymes to cotton processing can be separated roughly into two general fields, one of which embraces the modification of starch in either warp sizing or finishing mixes, while the second comprises the numerous applications to fabrics for starch removal or modification to facilitate subsequent processing or cleaning. In the preparation of warp sizes and finishing mixes, increased fluidity and penetration, without sacrifice of concentration, is commonly obtained by the addition of soluble starches. This effect can also be obtained by the partial conversion or liquefaction of the starch by enzyme action. The character of the finished product obtained by such action varies somewhat with variations in time and temperature of the digestion. This is controlled for use in warp sizing and finishing with satisfactory results if suitable amylases are employed and if the size of the batches being converted is sufficiently large to justify the added element of control. Since the presence of sugars in sizing and finishing pastes is not desirable, amylases of the liquefying type are preferable.

Uses of Enzymes in Desizing

Desizing of grey cloth is perhaps the most common application of amylolytic enzymes. As a process preparatory to kier boiling, it serves the purpose of effectively converting the starch to forms easily washed out, which generally results in a more satisfactory boil. In many plants, the most convenient point of application is the quench-box of the singer, where this serves the double purpose of quenching sparks from the singeing while also impregnating the fabric with the desizing liquid. This necessitates care, however, that the optimum temperature is not exceeded through heat absorption from the hot fabric, and especially that it does not approach the lethal temperature at which the particular enzyme ceases to function. The cloth is then piled in bins or rolled and allowed to stand three to four hours to complete the reaction. The concentration of the solutions employed for this are rather low, generally in the range of ½ to 1 per cent of the malt compounds, or their equivalents. Other applications to grey cloth consist in size removal for dyeing by treatment in the jig or passage through a pad with subsequent washing. Fabrics such as sheeting which are often sold in the grey state, as well as many lining fabrics can often be given a more pleasing and marketable appearance and handle without loss of weight, by passage through an enzyme solution to modify and soften the starch of the warp sizing. Following this treatment, the cloth is framed and calendered. Softening and releasing of the fibers can often be employed with economy in operations with respect to napping of heavy fabrics such as those intended for automobile tops which are often dyed in the gray. Other operations of importance are the releasing of gums and starches from printed goods and back greys followed by scouring. Some of the commercial preparations contain proteolytic enzymes in addition to their amylolytic content, which enables them to solubilize proteins to some extent. Thus mixed fabrics, particularly those having cellulose acetate warps which are sized with proteins, such as gelatin, casein mixed with dextrine, can in addition be completely scoured with these products.

The next installment in this series by Mr. Clark will discuss sulphonated fatty alcohols, etc.

Some Thoughts on "The Training of Men for the Textile Industry"

This started out to be a standard review of the extensive report just released on textile education; it readily developed into an expression of thoughts on the subject, some representing criticism—intended to be helpful—of certain phases of the report; others being inspired by it.

If the general tone is critical, as regards the report, the purpose of that criticism is constructive analysis made in the light of an interested, intimate, though perhaps narrowed, point of view on the industry and its needs. It is not an effort to disparage the broad purposes of the survey, but rather an effort to contribute to the wider, active and fruitful interest and discussion which, it is sincerely hoped, will issue from this pioneer study of a vital subject.

THE Educational Committee of the Textile Foundation has just published its survey, "The Training of Men for the Textile Industry". The objectives are: "An analysis of the opportunities for trained men in the textile industry, of the specialized training necessary for equipping men for the problems of the industry, and of the relation of the present textile engineering schools to such a program; with recommendations for immediate and future changes in the curricula of textile educational institutions." The committee, consisting of Dr. Karl T. Compton, president of the Massachusetts Institute of Technology; Dr. E. C. Brooks, president of the Agricultural and Mechanical College of North Carolina; and Dean R. E. Dougherty, of the engineering school at Yale University, had general charge of the survey, which was in immediate charge of Frederick M. Feiker.

The survey was undertaken to answer three main questions: What type of trained men are needed for the industry? What are the requirements for their education? How do the present textile schools fulfill these needs, and what improvements can be suggested? The heads of the textile engineering colleges were brought together and afterwards consulted many times. The director of the survey visited all of the textile engineering colleges at least once, and some twice. Questionnaires were mailed to 375 graduates of these schools.

This is the first broad study made of the educational institutions preparing men for the textile industry. It is evident from the report, comprising more than 20,000 words, that Mr. Feiker has pioneered with much enthusiasm and sincere effort, and has made some excellent suggestions. A detailed review of so extensive a document is not practical for these columns, but a general summary of some highlights of the subject, as they occurred to this reviewer in reading the report through, may be made and presented here in the hope of contributing further to the broad purposes of the report itself—a stimulation of interest in textile education, an improvement in that training for the best interests of the industry.

The report gives the author's conception of the present status of the industry and his criticism of it which, in brief, is that it is an old industry and in the immediate past has been conducted principally by rule of thumb and not according to scientific principles. This criticism is probably just and no doubt the injection of a greater number of scientifically trained men—if properly trained—will prove beneficial.

An obvious comment on the report from the textile manufacturer would undoubtedly be the effort made in it to broaden the study into a consideration of textiles "from the production of raw material to the ultimate consumer". The mill man will feel that with manufacturing and processing plants by far the largest available and most needy outlet for minds technically trained in textiles, with the established institutions equipped for preparation for these dominating branches of the industry, a worthwhile study and report might have been devoted exclusively to them.

Getting down to cases, the most specific portion of the report recommends "an articulated educational plan for the textile industry", which includes five types of education: (1) Vocational; (2) management; (3) chemistry and dyeing; (4) marketing and sales; and (5) advanced training and research. It is not made clear how these will be utilized by any particular institution. The report makes suggestions for "cross-breeding" modern management principles and philosophy, on a vocational stem, which in detail contain much food for thought.

The survey calls attention to the need for a command of management practices on the part of the future textile executive. The director seems to recommend that the amount of practical or vocational work in the established four-year course be reduced and that subjects of economics and social science (or management) be substituted—a contribution to the argument which has gone on for years as to the relative desirability of giving a student a broad general grounding in fundamentals, or a more highly focused course of narrow specialization. Mr. Feiker evidently leans to the former.

The subject of management—

A considerable amount of space is devoted to urging that teaching be done from the standpoint of management, rather than from that which is purely vocational. The exact procedure is not made clear, but apparently the idea is to follow the procedure of a school of business administration.

A hearty Amen to the suggestion as to the need for a command of management practices! But anyone who has followed closely the splendid efforts to make courses effective to this end, even with capable instructors and gifted but inexperienced boys, knows that the results upon the boy may vary all the way from complete non-absorption to a naive expectation of reorganizing the first department in which he gets a job or rapid promotion to a position of management. It is not necessarily the fault of the school, the course, the instructor or the boy. It is the inherent fault of any plan that cloisters education away from the stimulation and rectification of practical experience.

For this reason we had hoped that the report would point possible ways to closer synchronization of technical training and practical employment experience through co-operative plans of education. For this same reason we had hoped also that the report would raise the timely hand of warning against the present tendency in some schools to reduce the time spent in learning the textile processes —only to increase the time devoted to subjects that "take the boys' feet off the ground". But, on the contrary, we read that " * * * we must * * * reduce

that part which merely teaches young men to be expert operators."

Where is the textile engineering school that teaches anyone to be any kind of an operator, let alone an expert? When one considers the few hours that a college boy devotes to watching the machinery that a practical, experienced instructor sets up and runs for him, and compares this with the months of experience required to produce a good operator in the mill, we need not wonder at the oft-expressed thought of engineering school graduates subsequently successful in the industry, that much more time, rather than less, should be devoted to operating and fixing machinery.

As the survey shows, the chances are, and perhaps rightly so, the textile college boy will graduate into some humble operating job on the processes of machinery somewhere within the industry. No matter how much interest the employer may take in developing college boys, the boy must within a year or so demonstrate superior intelligence or lose his chance to do so. And the chance will not come in showing the Old Man how to manage the business; but rather through his being trained to use his intelligence on the humble job in hand and to know enough about workmanship that he can appreciate, and in turn be appreciated by the humble working folks around him. "Well done, good and faithful servant; thou hast been faithful over a few things, I will make thee ruler over many" is still the road to management as it was when pointed out by an humble working man two thousand years ago.

Any amount of management theory imposed during college is of little use if he who would manage doesn't know the people, the materials, the machinery, the processes and the product to whom and to which he would apply his theories. Especially so if by the time the young man has gotten up to a place of management, the economic world has so changed, as it has done in the past few years, as to emphasize entirely different factors of management from the ones that were current when he studied them.

Furthermore, a vital subject which was not considered was the mathematical impossibility of the limited faculties and facilities of the present textile colleges ever being able to begin to supply the need of the industry for the new kind of foreman and operating executive smart enough to cope with the costs of minimum wages and maximum hours in the face of old machinery, and big enough to win the good will of his labor to help him do it in the face of restrictive labor legislation, the like of which has never before been known.

What of these other schools?

While it is realized that there were reasons for confining the study to the existing textile schools of college rank, it seems unfortunate that the investigation did not consider in principle at least the vast textile vocational night school system for the training of operatives, foremen, overseers and other operating technicians which has sprung up throughout the textile manufacturing regions; the textile day vocational high schools, such as those at Fall River, Putnam, New York City, Greenville, Columbus, and the one under construction at LaGrange for the Callaway Mills. If these were reasonably outside the purview of the original report, their work and products are suggested for later consideration.

Then there are the textile correspondence courses (not mentioned in the report); and the great field of residence short courses that the textile engineering schools, were they adequately staffed and equipped, could offer experienced textile men as the need for such courses arise and as the men's opportunities would permit.

There is one suggestion which is novel and might be beneficial. That is for a post graduate course of one year of textiles for those who have had college courses elsewhere, in preparation for sales, accounting, styling or cotton classing work in the textile industry. The purpose would be to give them a smattering of textile manufacturing. The author does not suggest, but the reviewer does, that this might be a co-operative course providing for actual work in the mill for half the year. This would give the intelligentsia a grasp of the meaning of a day's work and would also be helpful to those taking up the job of writing critically about the industry.

The author deals at some length with details of curricula, and points out the variations and relative time devoted to the various subjects taught in the different textile schools; suggesting the standardization of the first two years, which might be practical.

He suggests that the interest of the industry in education is paternalistic. This word does not give a clear mental concept, if by paternalism is meant a continued and close interest in its object. Experience is to the contrary: the main factor between the industry and the school is a notable reciprocal lack of interest. If through the medium of this survey and its report, and the attention it is expected to generate, the barrier between the school and the mill might be punctured, if some agency might be set up to draw the schools and the industry closer together and enforce contacts which would be to mutual advantage, a most useful and effective purpose would be accomplished.

A real problem in education—

One particular purpose which the interest generated by this study should serve is that of waking the boards of trustees, the legislatures and the industry to the pitiful inadequacy of the present facilities of the schools, in physical equipment and otherwise; to the need for faculties adequate in numbers, in successful executive and research experience in industry, and in teaching enthusiasm; and to the need for a plan of financial support from all sources that would begin to make possible such facilities and faculties.

This is a vital point not only in connection with textiles, but the whole matter of college education. Insofar as southern schools are concerned, all the faculties at all the institutions are grossly underpaid. While many of these men are not working entirely for material reward, nevertheless, it is self evident that if the profession offers no material advantages, in its top layers, fewer and fewer young men of ability will be attracted to it. The same thing is now going on in the profession of teaching which has existed for so many years in the ministry.

A by-product of this system is that in some higher institutions of learning—not especially specialized textile schools, but in the academic departments—many professors, dissatisfied with the results of the social system as applied to them, become radical in their thinking and are at present poisoning the impressionable minds of students in some institutions with a brand of radicalism which has no relation to liberalism. Some of the ideals of the New Deal of the federal government might be better served by taking, say, fifty million dollars away from the Tennessee Valley Authority and spreading it among the educational institutions of the Southeast, to insure that no men coming in contact with college students should be paid less than five thousand dollars per year. This is a real problem in education at the present time.

Reverting to the report on textile education, this is a most comprehensive study. After reporting the director's findings as to the set-up of the industry, it discusses the opportunities for trained men in the textile industry and describes the trends in the in-

dustry that affect textile education. It next gives an interesting genealogy and background of the present textile educational schools, and then discusses the matching of educational objectives with present trends. The next chapter is devoted to the development of courses to meet educational objectives by discussing: a statistical analysis of present courses; the broad requirements of courses in textile education; suggestions for a curricula for textile manufacturing; the development of co-operative courses in the educational program; and suggestions for a graduate course for textile schools.

The survey itself, conducted with such thoroughness and enthusiastic interest as Mr. Feiker displayed, has served a most useful force in the industry in providing the means and vehicle for arousing, organizing and expressing an interest in textile education on the part of various factors in the industry. The bringing together of the textile school directors—for the first time in history—was in itself invaluable. The value of an outside point of view, as brought by Mr. Feiker, on the whole textile educational problem, is beneficial. The report of the survey will serve a still greater purpose if it is utilized in a co-operative manner toward developing and crystallizing the interest thus aroused, and in creating and fostering constructive action and activity with this report as the base.

The survey was offered by the author as a "report for action". Almost immediately following its presentation, constructive action was taken by the sponsors, The Textile Foundation, in annoucing that definite plans had been made for a semi-annual conference of the textile school directors, at the expense of the Foundation. The two conferences of these men held by Mr. Feiker while working on his survey brought them together for the first time in the history of textile education in this country. The action of the Foundation in making possible semi-annual gatherings of these men will contribute much to the cause of education, in providing a personal acquaintance and understanding between these men who charged with similar responsibilities have not in the past had opportunity of comparing their practices and exchanging ideas. This action should produce, immediately, results and benefits, to the schools and the industry, of a thoroughly worthwhile nature.

Arrangements have been made also that Mr. Feiker, who conducted the survey and made the report, shall devote at least one-third of his time to the subject of textile education and the application of his recommendations.

Improvements in the Chandler Bundle Method for Measuring the Strength of Cotton Fibers

By Howard B. Richardson*

THIS paper describes improvements made upon the method developed originally by Dr. E. E. Chandler, formerly of the Division of Cotton Marketing, Bureau of Agricultural Economics, for determining the strength of bundles of cotton fibers. The original method had certain defects in that the specifications of the conditions of the test were not fully enough outlined. It was found, for instance, that the size of the bundle seriously affected the strength obtained. Accordingly, it is necessary to specify the size of the bundles on which the tests are to be made. It has been found desirable to discontinue the method of expressing the strength in terms of the area of cross-section of pure cellulose. Instead, the strength is now expressed in terms of the cross-section of the bundle of fibers. In Chandler's original method the wrapping threads were not permitted to come together at the center of the bundle but remained separated by a space of about 1/50-inch. It has been found that the distance between the threads at the center of the bundle is an important factor which affects the strength of the bundle. Accordingly, it has been found desirable to allow the threads to come together at the center of the bundle before returning on themselves. Furthermore, it has been found that the degree and nature of combing affects the results and this operation is being more accurately specified. The results from the modified method are shown to be much more easily reproduced and more reliable. Some practical applications of the method are given which indicate that the method may have important value in the prediction of the strength of yarns and cords. The results of this study will be described in greater detail in a publication emanating from the Department of Agriculture in the near future.

*Assistant Cotton Technologist, Division of Cotton Marketing, Bureau of Agricultural Economics, U. S. Department of Agriculture.

Abstract of Paper Presented at the Meeting of Section I On Cotton, Committee D-13, American Society for Testing Materials, at Washington, D. C., March 8, 1934.

Determinations of Fineness and Maturity of Cotton Fibers

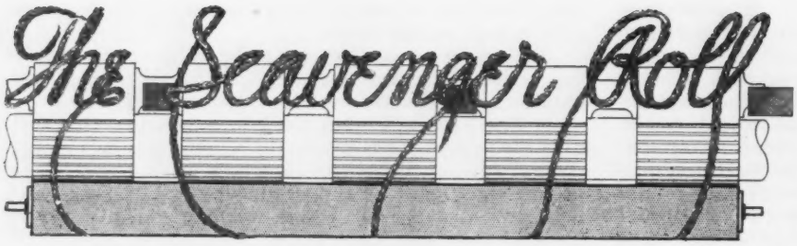
By T. L. W. Bailey, Jr.*

THE paper describes methods used in the Cotton Utility and Standards Research Section, Division of Cotton Marketing, Bureau of Agricultural Economics, for determining fiber fineness and maturity. Fiber fineness is determined by counting and weighing whole fibers of known length from groups of the length array differing in length by $\frac{1}{8}$-inch. The results are expressed as mean weight per inch. An index of fiber maturity is obtained by treating fibers with 18 per cent caustic soda and examining under a microscope. Thick-walled fibers appear as smooth rods, while the thin-walled fibers appear quite convoluted. The medium-thick occupy an intermediate position between the other two. The fibers are classified into three degrees of maturity or fiber-wall development and counted in groups of 100 fibers for each length in the length diagram. The importance of proper sampling is stressed. Photographs of equipment, photomicrographs of fibers and standard forms for recording and calculating the results are shown. Charts are presented showing some of the variations of fiber fineness and maturity throughout the different fiber lengths of the same sample of cotton, as well as the variation of fiber fineness and maturity for different growths of cotton. A more detailed publication is in preparation to be issued by the Department of Agriculture in the near future.

Assistant Cotton Technologist, Division of Cotton Marketing, Bureau of Agricultural Economics, U. S. Department of Agriculture.

Abstract of Paper Presented at the Meeting of Section I On Cotton, Committee D-13, American Society for Testing Materials, at Washington, D. C., March 8, 1934.

The Scavenger Roll



SOME readers feel that, due to the name of this department, it is devoted entirely to spinning. This is not the case, because its purpose is to pick up ideas on any and all departments in the mill, from this mill and that, and deposit them here for you. The name derives from the similarity of this function and the purpose of the scavenger roll. Reprints of several of the previous installments are available upon request. We welcome suggested topics for next month . . . .

Reversing Steel Rolls

Occasionally we talk with a spinner who isn't familiar with the trick of changing steel rolls from one side of the frame to the other to change the working edge of the flutes. While the frame is stopped one can feel the difference in the edges of the flutes on rolls that have been run several years. The bottom edge will be found to be quite dull while the top edge, which hasn't been working against the cotton or the top roll, remains sharp. By swapping the steel rolls from one side of the frame to the other the working edges of the flutes are reversed with consequent better drafting. This is the last thing to do before refluting the rolls or buying new ones.

Faulty Floor Construction

An engineering friend calls our attention to the faulty construction of many mills, resulting in vibration of floors and its attendant evils in machine operation. This made a deep impression on us because we had recently been present during a conversation between an overseer of carding and a superintendent regarding neps in the yarn. Two webs were being compared, one from the mill in question, the other from another mill. There was a striking difference in the neps in the two webs, and the carder was complaining bitterly that he couldn't set his flats as closely as he would like because of the vibration of the floor. Probably those cards cost a thousand dollars each; the floor space perhaps cost two dollars a square foot, or approximately two hundred dollars a card, including alleys, etc. To save a few cents a square foot on the floor space the whole investment was jeopardized, for the expensive card could not be properly set because of its insecure foundation. We sympathize with a carder under such conditions. He grinds his cards carefully and accurately, then sets them in the same manner, starts them up and has to begin "backing off" because of vibration. Discouraging, to say the least, and must likewise be discouraging to the machinery builder who has built the machine within small tolerance limits. And of course not only the card but every machine in the mill is damaged and penalized in production by the faulty construction.

These Cycles of Popularity

Someone told us that cotton mill equipment moves in cycles. This was illustrated by the vertical opener, which came out a good many years ago and was discarded for some reason, trouble with the step bearing, as we recall. A few years ago this opener came into prominence again, and now we find many being once more discarded, especially by mills using long staple cotton where the vertical opener is said to "curl" the cotton. And now we find mills going back to the blade beaters on their pickers. Not long ago we saw an installation of one-process pickers on which every beater was a blade beater. The carding beater seems to be losing its hold, for the present. The superintendent of the mill referred to said the carding beater breaks more fibers than the blade beater because the carding beater will catch fibers that are held at each end (of the fiber) by the rolls, the teeth of the beater catching in the loop and thus breaking the fiber. This sounds reasonable if the cotton is long staple. And we have seen another of these cycle tendencies. Some mills are having their twister bobbins made with flared or cone shaped tops, as well as cone shaped bases, for filling and combination winds. The cone at the top cuts down the pull of the yarn at that point where the angle of passage of the yarn is most severe and also prevents sloughing when winding off. This is a sensible bobbin principle but makes a queer looking bobbin. We remember throwing out several thousand spinning bobbins of similar shape which were being used in an old mill, discarding the idea as an old and erroneous one.

Loom Cleaning Methods

The following question and comment have been received from a mill agent: "Is it wise to use blow pipes for cleaning looms? I am prompted to ask this because during the past few months we have just about come to the conclusion that we would make less seconds, and probably keep just as clean looms by using brushes instead of blow pipes."

Inquiry (not as extensive as we hope to make) has been made along this line in several mills. The concensus of opinions gathered to date is that the increased expense of cleaning looms by brushing is not compensated for by the value of the seconds thus eliminated. It is agreed that fewer seconds are made by brushing than by blowing, but that in many cases some seconds can be saved by more careful blowing.

The experience of one high-grade chambray mill has been that most of the seconds made by blowing off the looms came from oil blown from the bearings and from oily lint blown up from the floor and onto the cloth. To protect the cloth a wire was stretched across the loom just behind the breast beam and from this wire a piece of cloth suspended, reaching to the floor. Since the blowing is done from behind the loom this piece of cloth acts as protector for the cloth roll.

One mill on print cloth and broadcloth has recently adopted an improvement in the blow-off practice. Whenever a beam runs out the man doing the blowing stops long enough to give that loom a thorough cleaning. Then he resumes his blowing. By getting to all parts of the loom while stopped not as much blowing off is required and an improvement in the cleanliness of the looms and in the quality of the cloth have been noticed.

Long Draft on Napping Yarns

One manager told us that long draft spinning isn't suitable for yarns going into napped goods. We admit complete ignorance on this matter, and are simply passing his views along in the hope someone will enlighten us. He says long drafting reduces the diameter of the yarn of a given number, so that when the cloth gets to the napper the good, full nap isn't produced that can be obtained from yarns spun with short drafts. The only comment we can make on this is that it may be that with long drafts (as generally understood) the straightening force of the friction of the fibers against each other

causes some reduction in the cross-section of the yarn as claimed.

Steadying Ring Rails

One mill had trouble keeping ring rails steady, level, and in line on spinning frames of a comparatively late model. On these frames the lifter rods are at the end of the rails. Small pieces of sheet iron have been cut as shown

by the sketch, and the end cast iron ring holder on each rail is tightened after being put through the holes in these pieces. The rails are held much more secure and steady by this simple device.

A "Kink" on High Twist

One of the best stunts we have seen for winding off, over-end, crepe and other hard twists that kink badly is the use of a leather cot made cone-shape and dropped down over the top of the bobbin. The yarn is pulled up inside this cot and as the yarn is wound off the bobbin, filling wind, the cot slips down the barrel and is always on top of the yarn. This makes enough tension to keep out the kinks. One mill on hard twisted ply yarns ran galvanized pipes the length of the winders just above the yarn supply spindles. The ends being wound off were wrapped once around a pipe, serving the same tension purpose as the cot described above. An interesting thing about this was that different diameter pipes were required for satisfactory operation on different numbers, plies, and twists.

Preventing Wear Inside Bobbin

How much thought have you given to the wear and tear on your roving frame bobbins where they fit on the bobbin gears? Recently we had the pleasure of talking with an experienced superintendent who was buying some new roving frames. He specified that the bobbin gears have rounded tops, so that when the bobbins are placed on in doffing there would be no chipping off by the usual sharp top edge of the bobbin gear. Take a look inside your speeder bobbins if you don't realize how much grief the bobbins catch at this point. Old gears can have these tops rounded off in a lathe.

Some Thoughts on Prosperity

We all are inclined to lose our perspective on this matter of Prosperity. Here the subject is discussed simply and clearly. You should feel better after you have read it. We did . . . . . .

EVERYONE wants to see prosperity return, but who will know when it gets here? For prosperity is a state of mind, a matter of perspective and comparison; in short, it is simply a question of having more than you have been accustomed to, or more than your neighbor.

Judging by the standards of the pioneers who settled this country, we were prosperous in the midst of our depression; not only moderately prosperous, but tremendously so. Compared with the privation, and danger, and hardships of colonial times, the worst of our depression was like a Sunday school picnic. These days it takes a lot to make us feel prosperous, but for thousands of years prosperity consisted in having a reasonable amount of food; clothes that would keep out the cold in climates where clothing was needed; shelter, and fuel. When a man had these he was accounted prosperous, because the common lot of mankind for untold centuries has been want, suffering, and hardship. It has only been within the last hundred or so years that the ordinary run of people had anything or expected to have anything.

Whenever you have more than you are accustomed to, you are prosperous. The loom fixer who becomes a second hand, then foreman, and finally superintendent, is certainly prosperous, and counts himself happy. Should he become treasurer of the corporation, he would feel that prosperity had reached its utmost limit, yet if he should lose his job, and have to take another one as superintendent, even at a larger salary than he got before he became treasurer, he is no longer prosperous, but feels that the hand of adversity weighs heavily upon him, and he is a most unhappy and miserable man. As a nation, we have recently passed through a similar experience. Wages, salaries, dividends, rents—incomes of all sorts mounted and mounted until practically everybody felt like the former loom fixer when he became treasurer of the mill. We have all had to readjust our ideas of values, but we have not had to adjust them back to the basis of twenty-five years ago, except with a very few painful exceptions.

There are so many things to want these days; things which our grandparents never heard of, but which are rated necessities by us, that it takes more than ever before in human history to keep us moderately contented. The entire cash income of a fairly prosperous colonial family would probably not pay the electric light and telephone bill; buy gasoline, and keep up the payments on the car for the modern household, without branching out into the realm of those things like food, clothing, rent, and coal, which were the necessities in the old days.

It is this consuming desire for more things and better things which has developed this country and made it rich and prosperous. This has also been responsible for all of our depressions. We want too much too quickly. The old virtues of thrift, economy, and self-denial are out of date. Folks have got out of the habit of wanting to work and wait for things. They want to have them now and worry about paying for them later. Some of the old timers like Franklin and Jefferson would probably say that we were pretty prosperous right now, and perhaps we are. Any country which can pay several million men industrial wages for sitting on wheelbarrows, or leaning on shovel handles must have a good deal of prosperity in reserve somewhere.

So after all, if prosperity isn't here now, when it does get here, who will recognize it, and who will be able to definitely say if and when it has arrived?

Some Thoughts on Profits

This brief, pungent discussion is good, sound doctrine for any man in business. It defines the what and why of profits in the real sense of the word and in an easily understood manner . . . .

To a great many persons, wealth and profit are practically the same thing. To the average man, profits produce wealth, and that is all there is to it. The business man is in business to make a profit; if he can make enough profit, he will become rich. It sounds very simple, but as a matter of fact, it is very complicated, because excessive profits can destroy wealth as well as create it.

There used to be a very definite school of economic teaching which held that the amount of wealth was fixed, and that the only way a person could become wealthy was by taking something away from someone else. We have learned the fallacy of this doctrine, and have found that wealth can be created in almost unlimited quantities. Wealth today is not a question of gold and jewels, lands and castles; but a matter of factories, automobiles, telephones, office buildings, railroads, and a thousand other things which can be created at will by industry. We have seen wealth multiply into a vast prosperity, and we have seen this prosperity collapse through inability to maintain the steady rate of creation of wealth. For thousands of years wealth was symbolized by lands and dwelling places. Wealth was something to own. Today wealth is something to use; something which is expended and must be replaced frequently. There is practically no limit to the amount of wealth which can be created, but there is a fairly definite limit to the amount of profit which can be made in its creation.

The incentive to every commercial transaction is the hope of profit, but an analysis will show that there is a fairly definite amount of profit which commerce and industry as a whole can enjoy at any given time. The profit on any transaction is of course the difference between the cost price and the selling price of the object of the transaction. Naturally, when you pay more for a thing than it costs, you must do it out of the profit which has accrued through some transaction of your own. To the great majority of us, this is the profit from the sale of our services, but someone who buys those services must pass the cost on to someone else, and he in turn to another person.

A great many economists have argued that this question of profits has been solely responsible for all of our depressions. They contend that profits are passed on from person to person and accumulated as an imaginary gain, until finally the crash comes when a considerable number of persons try to collect their profits. This is true to a limited extent, but profit exists, and profit within reason is necessary to commerce. It is obvious, however, that there must be some point in the commercial cycle where someone does not have to pass the item of profit on to someone else. The only men in this fortunate position are the farmer, the miner and the lumberman; who derive their profit from the forces of nature, and add to the wealth of the world without having to pay cash for everything they sell. It is therefore apparent that the profits of industry can never actually exceed at any given time, the net value over and above the cost of production of the products of forest, farm, and mine, with a few miscellaneous contributions such as hydro-electric power. Whenever industrial profits for the country as a whole exceed these values, these profits are merely existent on paper, and cannot be cashed in.

There is a story about a tramp steamer from Scotland which was wrecked on a desert island. When the crew were rescued sometime later, it was found that they had all become wealthy trading clothes with one another. Whenever business tries to work on this basis, the value of its profits will be about as tangible as the value of the profits made by the ship-wrecked Scotchmen.

What industry should prize above everything else is continuity of reasonably profitable operation rather than occasional sprees of big profits. Among the many contributing causes to the present depression was the piling up of paper profits long after the real source of profit had practically dried up. Like the Scotchmen who tried to collect each other's I. O. U.'s, we found that it couldn't be done. It will be a very healthy thing for industry if the huge profits of the late lamented boom days never come back. A man who is paid beyond his efforts and deserts generally becomes trifling and worthless, and the same thing is usually true of an organization.

But all the lessons of the depression; all the teachings of experience will be thrown to the winds as soon as business gets better. There will be the same old mad scramble for profit pyramided upon profit, until the whole economic structure collapses again. Every pig in the barnyard will try to get a little bit more out of the trough than he can possibly swallow and digest, and it won't be long before the trough will be turned over again. It has always been this way, and probably always will. Pigs don't go after swill or men after business in a reasoned and orderly manner. Even when a hog has had all he can eat, he will still turn over the trough.

Old-Timer Short Shots

Why not wake up, put a little "pep" into your life, be somebody, and see how much more you will enjoy life?

To keep a better man from coming along, show everyone you *are the best.*

One of the most expensive things a man can have— a bad temper.

Charleston Convention of American Association is Important Event

THE American Association convention is always a milestone of southern textile progress. This year it was especially important in giving opportunity for thorough discussion of industry conditions, which was carried out in a thorough and helpful manner. Charleston afforded also a delightful location for recreation and fellowship . .

IT WAS a wonderful occasion. The 34th annual convention of the American Cotton Manufacturers Association, held at Charleston, S. C., on April 19 and 20, provided an event of exceptional value to the southern cotton-textile manufacturers whom it serves, and of delightful entertainment and recreation. The attendance was perhaps equal to that of any convention of the organization's history; the program was designed and executed in a manner that provided much thought and information of value; and the traditional hospitality of this city of the Old South was exhibited to the fullest in behalf of the large number of delegates and their ladies.

W. D. Anderson Elected President

W. D. Anderson, president, Bibb Manufacturing Co., Macon, Ga., was elected as president of the Association for the coming year. (See biographical sketch of Mr. Anderson, page 45, this issue.) T. H. Webb, president, Locke Cotton Mills Co., Concord, N. C., was made first vice-president succeeding Mr. Anderson; Donald Comer, president, Avondale Mills, Birmingham, Ala., was made second vice-president, and W. M. McLaurine was re-elected secretary-treasurer. Five new members of the board of governors were selected: Louis L. Jones, vice-president, Canton (Ga.) Cotton Mills; Fred Smyre, A. M. Smyre Mfg. Co., Gastonia; George P. Swift, vice-president, Muscogee Mfg. Co., Columbus, Ga., and A. F. McKissick, Easley (S. C.) Mfg. Co., and Harvey W. Moore, treas., Brown Mfg. Co., Concord, N. C.

Address of T. M. Marchant

There were three main sessions of the convention. The first, on Thursday morning, April 19, drew by far the largest and most interested attendance of any in years. Following the preliminary, Thomas M. Marchant, president and treasurer, Victor-Monaghan Mills, Greenville, S. C., who has served the association as president so effectively and faithfully for the past year, presented the annual address of the president, which was regarded by those present as an outstanding report of the organization's work during the year, and as a presentation of the prevailing problems of the industry. The complete address is available in pamphlet form at the secretary's office in Charlotte.

Mr. Marchant first paid tribute to the work of the members of the southern association acting with him as a special committee on the cotton-textile code authority—Donald Comer, W. D. Anderson, Cason J. Callaway, W. J. Vereen, R. E. Henry, C. A. Cannon, B. B. Gossett, S. W. Cramer, and Robert R. West—emphasizing the unselfish and unstinted manner in which these men had served their fellow manufacturers, and declaring that every phase of the industry, the large mill and the small mill, the strong and the weak, the urban and country mill, all had their interests well represented in this group. He commented upon the cordial relationships that have existed between the southern and eastern representatives on the authority—"it is remarkable, when we think back of the animosities that once existed between these sections, to find the North and South sitting around a common table, discussing openly and candidly our problems." He paid tribute also to George A. Sloan, president of the Cotton-Textile Institute and chairman of the Code Authority; "the industry's untiring leader and national diplomat"; to the organization's legal advisers, O. Max Gardner and Fred J. Morrison; to Dr. B. E. Geer, Robert W. Bruere, George L. Berry, of the National Cotton-Textile Industrial Relations Board; and to the government representatives involved in the administration of the cotton-textile code.

Reviewing Code Achievements

In reviewing the NIRA code in the industry, Mr. Marchant emphasized the progress made under Code No. 1 for cotton-textiles; declared that conditions and experience demonstrated the inadvisability of any uniform plan for industry as a whole, and urged that "the recovery administration, rather than attempt further drastic changes in policy, should devote its energy largely to clarifying the recovery act, refining the codes that have been so hastily organized, and effecting a rigid enforcement." He expressed the belief that obstacles in the way of political uncertainty due to such proposed legislation as the securities act, the stock exchange bill, the Wagner Bill, and the Connery Bill, were creating timidity on the part of money or capital, feeling that with the consumers goods industries having, such as in the cotton-textile industry, absorbed more nearly their share of the unemployed than the capital goods industries, would immediately release expenditures that would aid activity in the durable goods industry provided the spectre of uncertainty as to government activity along these lines were not present.

T. M. Marchant

Mr. Marchant, in next discussing the effects of the code upon labor, paid high tribute to the loyalty, patience and understanding of the southern textile employees in the working out of problems. He cited figures from Mr. Sloan (previously published) as to the effect of the code upon wages and employment. "Employment in this industry in each of the four months, July to October 1933, exceeded the 1926 employment level and almost equalled the employment level in 1923, the highest predepression year. In January 1934 employment was higher than in 1928-1929. In February 1934 the employment figures again approximate the 1926 level. * * * If one of the ob-

jectives of NRA is to restore the employment conditions of the year 1926, the cotton textile industry under its code has already attained this end."

As to wages: "Full time weekly wages increased (average) from $11.61, the low in April 1933 to $15.29 in November 1933, an increase of about 31 per cent. Average weekly earning increased a similar percentage during the same period. Average hourly wage per capita increased from .215 cents in April 1933 to .364 cents in November, an increase of over 69 per cent." Mr. Marchant cited figures showing that preservation of the wage differentials for the higher skilled groups "has done more than prevent minimum wages from becoming maximum wages—it has increased the maximum rates themselves."

The speaker covered the matters of increased costs to the consumers under the code and the processing tax on cotton, declaring that "When it is taken into consideration, particularly in the South, that the 110 to 140 hour work week has been shortened to an 80-hour work week, and that wages have been practically doubled, it is but natural that this fact should reflect itself strongly in the price of textile commodities. The processing tax has been an extra added cost which by this time has reverted itself back to the form to further increase the price of the manufacturers' raw materials and this has increased the consumer's price. Again, it must be taken into consideration that throughout the channels of trade, in which textile commodities travel, there have been codes and increased costs."

As president of the American Association, a member of the code authority, and its sub-committee on industrial relations, Mr. Marchant declared he had ample opportunity to study the compliance with which the various units have co-operated in the administration of the code. He said with few exceptions, the now decreasing number of complaints had come from a misunderstanding or lack of understanding of the code principles. While congratulating the spirit of the manufacturers, however, he said, "if there should be any of our southern people who have an idea that they can wink at any of the provisions, or can evade by some process of shrewdness, I hope they will immediately be discovered and whatever teeth there may be in the NRA law will sink into their very vitals."

"Factors Impeding Recovery"—

Mr. Marchant next turned to the importance of national legislation proposed as affecting industry and the importance of more interest on the part of industrialists in this. He commented upon the dangers of the various bills proposed as pertaining to labor changes. With reference to the AAA and processing tax, he called attention to the fact that, along with a shorter work week and increased wage rate, the cotton-textile industry was well-nigh alone in facing also the extra added burden of a processing tax. He noted that this tax "will collect from the consumers in one year more than the combined net profits of the cotton textile industry during the best year it has had since the world war;" "it amounts to over six times as much as the cotton textile industry pays for all state, county and municipal taxes combined."

The speaker urged that efforts be made toward more equitable compensating taxes and tariffs on materials competing with cotton, citing that the imposition of a cotton tax without adequate similar levy on competition has practically killed the cotton products export business; has increased importations of cotton floor coverings, rugs, tire cord, etc.

He called attention to several important problems of freight rates and taxation as they affect southern mills; on the latter point he showed that "the tax rates per spindle by mills in most of our southern states have steadily increased; while New England rates have decreased." South Carolina showed an increase of 51 per cent in the per spindle tax in 12 years, while three New England towns showed decreases ranging from 21 to 39 per cent. "The New England decreases reflect a vigorous effort at tax relief on the part of the industry and also reflect the dire disaster which until two years ago disrupted New England industry. Unquestionably our tax burden in the South is too great. If our mills are to survive, it is absolutely essential that we all work vigorously to bring about property tax relief."

As to the $1.00 differential in wages between North and South, in recognition in the code of the peculiar village problems of the South, Mr. Marchant said, "it is doubtful if there is a single mill in the South whose village does not cost far more than the actual wage differential between New England and Southern mills. From a comparative wage standpoint, considering the cost of the village and the other wage equivalents, the southern mills are at a decided disadvantage. Articles carried in COTTON and *Textile World* as well as numerous other statistics, show the extra village cost at $2.00 to $3.00 per person per week."

Address of George A. Sloan

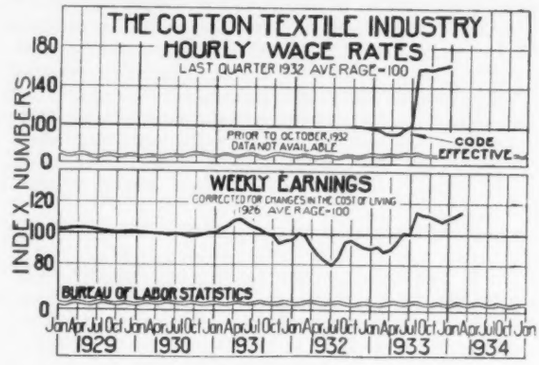
The next feature of the session was a remarkable address by George A. Sloan, president of the Cotton Textile Institute, and chairman of the Cotton Textile Industry Committee, the industry's Code Authority. As in the case of Mr. Marchant's able address, it is regretted that space limitations prevent the use of Mr. Sloan's remarks in toto. He began with a review of the development of the cotton-textile code, which grounds in detail have been covered in previous published statements. He declared that in consequence of the code provisions, "we are now employing substantially as many people as in the pre-depression year 1926. While mill earnings are still far from satisfactory, business activity and confidence for the future have revived in hundreds of communities wholly or chiefly dependent upon our mills." He emphasized the importance of the adoption of the machine-hour limitation in the industry, calling it "the keystone of our code." Through it, he said, "the burden of over-capacity, which for the past decade has hung around our necks, has been materially lightened. Production has been brought within a measurable distance of consumer demand. The gradual waste of working capital resulting from the necessity of finding purchasers for a volume of production beyond the capacity of the market to absorb, has been arrested. For the first time in many years a large part of the industry is out of the red, and can see, in prospect at least, a possibility of some return from its activities. Withal, there has been no undue increase in price to the consumer." While substantial increases in price have occurred, Mr. Sloan pointed out, they no more than reflect the additional costs of making effective the NRA program of rehabilitation plus the processing tax which has amounted to approximately $79,000,000 during the past eight months.

George A. Sloan

Mr. Sloan departed from his prepared paper to refer to National Cotton Week (May 14-18 this year) and urged active participation in it by southern textile men.

In the next section of his address, Mr. Sloan presented some up-to-date charts showing the gradual effect of the changes caused by the cotton textile code in wages and conditions of employment. These

charts are reproduced herewith. Chart No. 1 shows the increase in average hourly wages of employees following code adoption, showing an increase in January 1934 of 61 per cent over July 1933. At the same time, the average weekly earnings for the shorter hours of work under the code are higher than the wages received for the longer pre-code hours. The graph shows another curve showing the change in real wages—or purchasing power-which takes into


THE COTTON TEXTILE INDUSTRY
HOURLY WAGE RATES
LAST QUARTER 1932 AVERAGE = 100
PRIOR TO OCTOBER, 1932 DATA NOT AVAILABLE
CODE EFFECTIVE
WEEKLY EARNINGS
CORRECTED FOR CHANGES IN THE COST OF LIVING
1926 AVERAGE = 100
BUREAU OF LABOR STATISTICS
INDEX NUMBERS
180
140
100
0
120
100
80
0
Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan
1929 1930 1931 1932 1933 1934

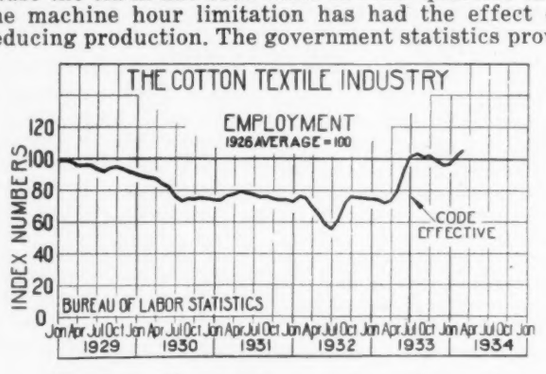
Graph 1—Showing increase in hourly wage rates and weekly earnings, and effect of code

account the 4 per cent increase in the cost of living between July 1933 and February 1934. This curve shows that the present weekly wages of cotton mill workers have a greater purchasing power than even in 1929.

The second graph shows the great increase in employment under the cotton textile code; with the present level of employment higher than in 1929. This also shows a rising trend in employment during the two or three months prior to the adoption of the code.

Graph No. 3 indicates the amount of raw cotton consumed each month; and the mill activity maintained during the first eight months of the code. The cotton consumption during this period was five per cent greater than last year, and greater than in any year since the 1929-1930 cotton season.

"I emphasize this point," Mr. Sloan said, "because the claim has been made in some quarters that the machine hour limitation has had the effect of reducing production. The government statistics prove



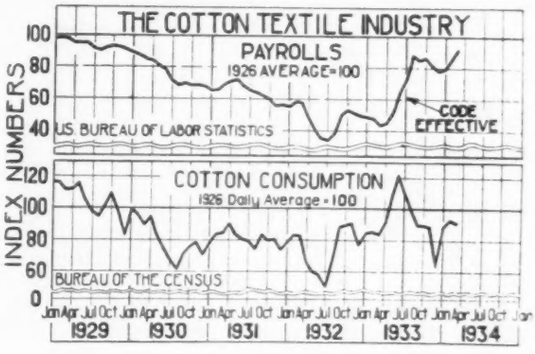
Graph 2—Showing increase in employment, based on the 1926 average . . . .

that the contrary is true. I feel absolutely safe in making the assertion that the limitation of 80 hours for productive machinery in the cotton textile code has been more than ample to take care of the consumption requirements of the country. The machine hour limitation would permit 20 per cent more spindle hours than were required during the year of most active cotton mill activity during the last dozen years."

Graph No. 3 shows also the increase in mill payrolls, this curve outstripping the ratio of increase in the volume of business.

Mr. Sloan felt that the machine hour limitation has unquestionably had a beneficial effect on the market situation, in giving buyers more confidence in the stability of the industry and causing them to depart from hand-to-mouth buying, as well as to stabilize employment. He reported that the net situation as to Production, Stocks on Hand and Unfilled Orders, at the end of March 1934, was better than at any corresponding period during the previous six years; was better than at the end of any month during 1928, 1929, 1930 and 1931. Unfilled Orders on March 31, 1934 amounted, after deducting stocks on hand, to 2.59 weeks of current production—an exceptionally strong position.

"However," Mr. Sloan said, "I do not mean the



Graph 3—Trend of payrolls, and cotton consumption, from 1929 to 1934 . . .

situation described is true of every subdivision in the industry. There are some exceptions wherein there is much room for improvement. * * * It is clear that the normal demand for cotton goods in the four or five months immediately ahead—due to seasonal dullness—will be less than the volume that can be produced under the present machine hour limitations. This is a matter that calls for most careful consideration and planning on the part of each individual manufacturer.

"I lay emphasis upon this economic adjustment in production because we must do everything possible to prevent the demoralized markets that have so severely depressed the industry in preceding years. We must not for one moment think that the code in itself is a cure-all; that we can all run full-time two shifts every month in the year. The code offers no escape from the necessity of efficient management and merchandising and constant attention to the problem of balancing production with demand."

The industry wants to buy—

The remainder of Mr. Sloan's paper was devoted to discussing matters with an important bearing on the future success of the recovery program. Additional weight is to be given his remarks in view of his conspicuous position in that program as chairman not only of the Cotton Textile Industry Committee, but of the Consumer Goods Industries Committee as well. He pointed out that the consumer goods industries have re-employed or re-absorbed more than 80 per cent of their own unemployed, but that more than nine-tenths of the present unemployment is outside these industries. He discussed the recent survey (see page 64 for details) made among cotton textile mills as to the potential market for absorption of capital goods, placing the amount of capital expenditures which the industry would like to make, within the next 18 months, at approximately $100,000,000. "If there were a prospect of operating for a reasonable period at a fair profit; if capital funds were available; if fear of unreasonable governmental restrictions were removed, this is the amount which our industry would be prepared to ex-

pend for the purpose of placing and keeping its physical assets in sound operating condition," said Mr. Sloan.

But, Mr. Sloan continued, in all of the answers in this survey, there was a current of doubt and hesitation because of apprehension of the consequences of certain governmental measures pending. He mentioned the Connery Bill for an inflexible 30-hour week, the Wagner bill, the Securities Act, and the Stock Exchange Regulation Act as examples. The latter two, Mr. Sloan said, "proceed upon the theory that it is in the public interest to impose a straightjacket upon business enterprise. As a very distinguished Southerner from way down in Georgia recently wrote to me: 'The most charitable view of this legislation leads to the conclusion that its proponents, full of branch water and proud purposes, have set out to protect the people from themselves.'" Mr. Sloan then continued:

Why burden business as a group?

"Assuming the laudable intention of this type of legislation to prevent the defrauding of investors through unscrupulous or fraudulent flotation of securities, is it not pertinent to ask whether these Acts have been so framed that the honest business man, seeking to enlist unemployed capital in his service, has imposed upon him risks which no prudent man can safely assume in the course of the creation, issuance and sale of the securities representative of the money which he seeks?

"Pertinent also is the question as to whether the heavy and growing burden of taxation can be borne by industry. Provisions have been advocated, as part of the Revenue Bill now pending, which will, if enacted, impose unreasonable if not intolerable burdens upon industry. To say, for instance, as was at one time proposed, that a plant may deduct only a portion of its necessary depreciation allowance in computing its taxable income, is to violate sound principles both of accounting and of taxation.

"The inclusion of the Capital Stock Tax with a compensating excess profits tax, as a permanent part of our Revenue system, it seems to me, is unreasonable and discriminatory. The heavy burden of the processing tax has already been mentioned.

"When to actual burdens already imposed there is added the continual agitation in Congress and in State Legislatures of measures having the effect of piling additional loads upon the transaction of honest business, how can businessmen proceed with any confidence in the making of those necessary expenditures which must be made if the Capital Goods Industries are to be revived and if the major burden of unemployment in the country is to be relieved?

"I believe, moreover, that there is a further danger against which industry and the National Recovery Administration must be on guard. Up to the present time the recovery program has succeeded largely because it has been cooperatively conceived and administered. But instances now occur from time to time where it would appear that on the Government side, there is a tendency, in some quarters, to yield to the temptation to act arbitrarily; to superimpose, *ex parte*, new conditions and provisions upon industry. As yet these tendencies have not developed sufficiently to be serious; but I feel it my duty, as one who is tremendously interested in the success of NRA, to sound the warning that there is no surer way to undermine the successful working of the National Recovery Program, than for the Government to abandon the cooperative conception, the ideal of self-government by industry under Government supervision, which so far has characterized every major policy and activity in the administration of the Act.

"I cannot but feel that underlying the measures and policies to which I have referred, there is a fundamental unsoundness which characterizes far too much of our economic and political thinking. We are apt to say that business, and particularly 'Big Business', has failed to meet sound standards of honesty and fair-dealing. We are prone to denounce bankers, industrial leaders and capitalists generally, as selfish, short-sighted and obsessed by greed. We overlook the fact that the qualities that we decry are not the exclusive possession of any class in our society. I venture to say that for every robber baron of the capitalistic world there is a labor racketeer; that for every profiteer there is a consumer seeking to buy on unconscionable terms; that for every man of large income who tries to evade the payment of his just income tax, there are dozens who consciously avoid or ignore obligations imposed by state or local laws for the payment, by each in accordance with his ability to pay, of his just share of the tax burden.

"No indictment by groups of the integrity of our citizenship presents a true picture. Is it not time for us to begin to recognize as a national asset, the upright man who seeks to do business at a reasonable profit, with justice to his employees, to his customers and to himself and those associated with him in ownership and management? Again I will turn to a distinguished member of Congress for the answer. Last Saturday, Representative Doughton of North Carolina, Chairman of the all-important Ways and Means Committee, in commenting upon the tax bill which had just undergone serious revision in the Senate, stated: 'To deny the consolidated returns would cause hardships. *I would rather let a few get away with something than put a hardship on all corporations.*' There is plain common horse sense for you. Should not the millions of honest business men be conserved and protected as other national resources?

"Should we not re-examine our whole scheme of business regulation, of taxation, of social legislation, for the purpose of determining not merely whether every possibility of wrong-doing has been covered and guarded against, but whether, in our effort to let no guilty man escape, we have not so beset the path of the honest man with pitfalls that he is unable to proceed along the road which he is entitled to travel?

"Is it not time to call a halt to wholesale denunciation of business and businessmen, and to cease to legislate for or against groups, but, rather, for the benefit of the country at large?"

Mr. Sloan was followed by Robert W. Bruere, chairman of the National Cotton Textile Industrial Relations Board, created and operating under Section XVII of the Cotton-Textile Code, who briefly discussed in general terms the activities of that board in the adjustment of employer-employee disputes in the industry. He declared that most of the complaints received, now on the decline in numbers, came from misunderstanding of the code provisions; lauded both mills and employees for the co-operative and constructive attitude that had generally been expressed; and plead for a continuance of close understanding, patience and trust between owner and worker.

Thursday afternoon was given over to recreations, which included golfing, boating, trips through the several attractive gardens in and around Charleston. Thursday evening the annual banquet, with the ladies attending, provided a most enjoyable social occasion, with Strickland Gillilan, humorist, as speaker. President Marchant served as toastmaster, and introduced a number of special guests, including General E. P. Summerall, of Citadel College, Charleston, who spoke briefly.

The final session was held Friday morning, which consisted mainly of business activities, including the reports of the secretary-treasurer, traffic committee, cotton committee, The Arkwrights Committee, and

others. The officers reported at the beginning of this story were elected unanimously. Resolutions adopted included one endorsing the principles of NRA and urging time for an opportunity for the benefits to develop before the adoption of changes such as those contemplated by the Wagner Bill; one urging reciprocal trade agreements for the restoration of the country's export trade; one urging tariff for protection of cotton and cotton goods against jute from India; one requesting the AAA to give no consideration to the proposed removal of compensatory taxes on paper and jute, and urging the application of adequate taxes on all products competing with cotton; other resolutions expressed thanks to those contributing to the convention, and to the southern representatives on the code authority; and another expressed condolences at the passing of those members of the industry lost by death during the year.

The retiring president's medal was presented to Mr. Marchant by B. E. Geer in an appropriate tribute to Mr. Marchant's untiring efforts in the industry's behalf. Mr. Geer also called attention to the "growing confidence" which the National Industrial Relations Board, of which he is a member, sees in the employer-employee relationships in the industry, and urged interest by textile manufacturers in a conference on industrial relations to be held at Blue Ridge, N. C., on July 7th.

The Saturday session, which concluded the meeting, was followed by a yacht trip by many of the delegates, as guests of the City of Charleston, to Fort Sumter and other points of historic interest around the city.

Textile Hall Corp. Elects Officers

The annual meeting of the directors of Textile Hall Corporation was held at Greenville, S. C., Friday, March 30th. The following directors were elected: John W. Arrington, president, Union Bleachery, Greenville, S. C.; W. E. Beattie, retired, Greenville, S. C.; Cason J. Callaway, president, Callaway Mills, LaGrange, Ga.; W. W. Carter, treasurer, Fiske-Carter Cons. Co., Greenville, S. C.; Thurmond Chatham, president, Chatham Mfg. Co., Winston-Salem, N. C.; Donald Comer, president, Avondale Mills, Birmingham, Ala.; Herman Cone, treasurer, Proximity Mfg. Co., Greensboro, N. C.; R. I. Dalton, southern agent, Whitin Machine Works, Charlotte, N. C.; J. F. Gallivan, president, Gallivan Cons. Co., Greenville, S. C.; B. E. Geer, president, Furman University, Greenville, S. C.; B. B. Gossett, president, Chadwick-Hoskins Co., Charlotte, N. C.; Edwin Howard, southern sales manager, Veeder-Root, Inc., Greenville, S. C.; George H. Lanier, president, West Point Mfg. Co., West Point, Ga.; H. A. Ligon, president, Mills Mill, Greenville, S. C.; J. Spencer Love, president, Burington Mills, Burlington, N. C.; Carter Lupton, president, Dixie Mercerizing Co., Chattanooga, Tenn.; J. A. McPherson, vice-president, J. E. Sirrine & Co., Greenville, S. C.; J. E. Sirrine, president, J. E. Sirrine & Co., Greenville, S. C.; W. O. Sirrine, attorney at law, Greenville, S. C., and Fred O. Tyler, secretary, Anniston Mfg. Co., Anniston, Ala. The directors subsequently elected W. G. Sirrine, president and treasurer, J. A. McPherson, vice-president, and Miss Bertha N. Green, secretary.

The corporation, which built and operates Textile Hall, enters its nineteenth year, with preparations under way for the eleventh Southern Textile Exposition which is to be held October 15th to 20th. Most of the important machinery builders of the country have taken space and plans are proceeding rapidly for what promises to be one of the most interesting shows ever held in the Hall.

This will be an all-textile exhibition to which all mill executives and workers in New England and the South are invited. Reduced railroad rates have been announced south of Washington, and are now being sought in the New England territory. Special sleeping cars will be operated each day of the show from Greenville and Atlanta.

The Southern Textile Association will hold its autumn convention during the week, and there will also be a meeting of the Greenville Section of the American Society of Mechanical Engineers. Other special meetings and conventions are being arranged.

* * *

Georgia Convention at Sea Island, May 18 and 19

T. M. Forbes, secretary, has announced that the 34th annual convention of the Cotton Manufacturers Association of Georgia will be held at the Cloister Hotel, Sea Island Beach, Ga., on Friday and Saturday, May 18 and 19. An interesting program is being arranged, which will be centered around the subject of labor relations.

* * *

Sees Industry Squeezed More and More Between Conflicting Government Authority

The current issue of the Textile Organon, published by the Tubize Chatillon Corporation, contains some interesting comment on the manner in which the conflicting lines of government authority, resulting from the "crazy-quilt pattern of economic theories which are being promoted simultaneously in Washington" are affecting the business world.

"The confusion of aims as between the various departments of the government continues and even increases," states the publication. "The NRA attempts to do one thing and along comes some other department, say the AAA, and an entirely different set of principles and rules is set up for a given industry. Apparently the trouble is with poor coordination at the top of the government, but on the other hand it may be essentially impossible to completely correlate and integrate the ever-growing activities and departments. And, of course, it is possible that the trouble is just old-fashioned jealousy as between government departments such as we have sometimes seen in the best-run business concerns. In the meantime, industry is squeezed more and more between conflicting lines of government authority. We wonder how long the government, much less industry itself, will continue to tolerate the crazy-quilt pattern of economic theories which are being promoted simultaneously in Washington.

"Take the case of the conflict between the NRA and the Federal Trade Commission as contained in the Commission's report of March 20th to Congress on the effect of the steel code on monopoly prices. The report itself states that 'a distinct conflict of means and objectives exists between the provisions of the code and the Commission's order in the Pittsburgh plus case. The conflict raises questions not only of legal import but of basic economic implication.' The stated realization of this conflict by one government department is most hopeful. Some industries don't mind being on one horn of a dilemma for the sake of the New Deal, but to be impaled on two or three horns simultaneously may prove to be too much of a good thing eventually.

"Emphasis in the NRA is to be shifted from the consumers goods industries to the capital goods industries, according to the press. But before much building can be done, for example, the rules for issuing new securities may have to be relaxed somewhat. Again, the conflict between governmental departments is clearly indicated."

Eastern Carolina Division Meeting at Raleigh Discusses Mill Problems

SEVERAL questions relating to carding, spinning and weaving were discussed at a meeting of the Eastern North Carolina Division of the Southern Textile Association, held at N. C. State College in Raleigh, N. C., on Thursday, April 26. This division, covering largely the yarn mills in the eastern section of North Carolina, made its first endeavor at the meeting last month to include weaving in its discussion. The attendance was representative, but unfortunately, few of those present had previous knowledge of the subjects to be covered, and the discussion was restricted to a comparatively few men who, due to the lack of time available for any one question, were not able to thrash out the various points developed.

Following the afternoon session of the meeting, the delegates attended the annual textile exposition and style show conducted by the textile department of the school under the supervision of Dean Thomas Nelson of the textile school. At the style show several scores of young college girls modeled costumes made by themselves from fabrics designed and woven by textile students.

The discussion meeting was in charge of M. R. Harden, superintendent, Erwin Cotton Mill No. 4, West Durham, N. C., who presided in the absence of E. M. Holt, chairman. M. R. Vick, overseer of carding, Rosemary (N. C.) Mfg. Co., conducted the carding section; D. F. Lanier, superintendent, Oxford (N. C.) Mills, led the spinning discussion; and the weaving session was directed by A. L. Agner, overseer of weaving, Erwin Cotton Mill, West Durham.

At the election of officers, held during the meeting, M. R. Harden was elected chairman of the division for the coming year; and J. L. James, superintendent, Erwin Cotton Mill No. 1, West Durham, was made secretary succeeding Mr. Harden.

Overhauling Card Room Machinery

The theme of all of the discussions was that of overhauling mill machinery. In opening the carding discussion, Chairman Vick asked, "What are some of the important points to watch in overhauling pickers?" He himself mentioned that, where the "grease-gun" method of lubrication is used, the slow moving bearings are very important; that unless proper care is given, the grease will fill up the lubrication groove and produce trouble. E. G. Boyd, overseer of carding, Borden Mfg. Co., Goldsboro, brought out that if too much oil is used, black work will result. C. S. Tatum, manager, Pilot Mills Co., Raleigh, asked how often the segments on the picker evener motion should be cleaned and oiled. Mr. Boyd replied that his are examined and cleaned twice a day, and given a thorough cleaning about every six months. J. W. Thompson, overseer of carding and spinning, Oxford (N. C.) Mills, spoke on the importance of keeping the eveners in proper shape to produce good work. He urged the importance of having adequate supplies for making repairs when necessary.

A member asked for experiences with one-process pickers, as to rejected laps, etc. Mr. Boyd reported the use of single-process machines in which the back evener is controlled by the front one; he said he has no trouble with set-backs except when he feeds in too much card waste and lap waste in bunches. Mr. Vick said his experience is that two per cent is not too little to expect if cotton is fed properly; Nelson N. Harte, Martinsville (Va.) Mills, agreed, stating his tests showed an average of 1 to 1½ per cent laps set back on single-process picking. These men allow ½-pound variation each way from standard.

At Mr. Harden's request, W. T. Byrd, overseer of carding, Erwin Cotton Mill No. 1, told of the use of a ball bearing application on the evener shaft to prevent its binding; he said the idea came from seeing a ball bearing Pitman roller on a spinning frame, and that it works fine on the picker.

The man who had asked about one-process pickers stated he had trouble with too much cotton coming to his evener; that the evener belt goes as far as possible and still a heavy lap is made. Mr. Vick suggested controlling more evenly the supply of the cotton in the hopper. A. P. Richie, superintendent, Dixon and Trenton Mills, suggested an additional cylinder in the hopper for turning back the lumps of cotton; Nelson Harte suggested that taking thinner layers off of the laps would help greatly.

Mr. Richie brought up the matter of variation allowance in laps, those answering reporting ½-pound either way from standard. Mr. Richie said he has run tests from laps with much wider variation or difference than that, and the card sliver was just as even. Mr. Vick agreed, but pointed out there must be some rule since the picker room is left with little responsibility.

M. R. Harden described and spoke highly of the Aldrich regain instrument, for indicating the amount of moisture in laps. He said that with this instrument, which makes allowance for a changing moisture content in the cotton, and with the hunting-tooth knock-off gear, they had improved their lap evenness greatly. W. L. Davis of Greensboro asked whether there is any difference in lap evenness with different lap weights. Mr. Boyd said he runs 16, 14, and 12-ounce laps, and finds no measurable difference in the variation or set-backs on the different weights.

The next discussion, as to whether it is better, in clothing cards, to draw on one time or two times, was summed up by Mr. Vick who said that if weather conditions are favorable and the card clothing and cyl-

inder are about the same temperature, once is sufficient; but that with a different temperature between the cylinder and clothing, two drawings might be advisable. Mr. Richie, however, expressed the opinion that "a man who wouldn't do it right the first time wouldn't put it on right the second time." It seemed the general opinion that this work should be done by a specialist; "a man who clothes cards should be in the habit of doing it", said Mr. Vick.

The carding discussion was concluded, on account of lack of time, Mr. Vick offering the following question for later discussion: "What is the best method of setting rolls on fly frames with reference to the distance between the rolls and the relationship between the top and bottom rolls?"

Spinning Overhauling

Mr. Lanier opened the brief spinning discussion by asking opinions as to the best method of lining and leveling frames. A number of those present reported experience with a modern method of overhauling frames, supplied by a commercial shop on either a rental or a purchase basis, with which specially designed equipment and instruments are used. This was described by P. B. Parks, Jr., superintendent, Erwin Cotton Mill No. 2, Erwin, N. C. All present who had used it reported thorough satisfaction with the system, declaring it far superior in accuracy and time-saving than the old method of lining and leveling.

The next question raised the practicability of refluting and re-necking steel rolls in the mill machine shop. Several of those present stated they successfully re-neck rollers, but none felt it practicable for a mill shop to try re-fluting. Mr. Harden read an extract on this subject from the article on Overhauling in February COTTON. One man reported entire success with the practice of swapping steel rolls to the opposite frame in order to get the benefit of the unworn side of the flutes.

The spinning session was concluded by a brief discussion of spinning bands; no definite information being offered as to average band consumption, which was requested in the question submitted.

Weaving Discussion

After luncheon, Mr. Agner conducted the weaving discussion. The first question asked whether it is necessary to have a periodical overhauling of looms. "I believe there are certain parts of a loom that require periodical inspection," said Mr. Harden, "whereas other parts can be kept up in good condition without it. I take a halfway position; I feel it would be bad practice never to overhaul a loom, but to go over all of them loom by loom regularly would be equally a fallacy." Most of those present seemed agreed on the point that when the warp is out a thorough inspection of all parts should be made, but that the greater responsibility of overhauling should be left to the loom-fixer. It was asked what control of the situation may be exercised in a mill on two shifts —with two fixers and weavers working on the same set of looms—but no one present offered any plan as to definitely fixing the responsibility on the right man under two-shift conditions.

P. B. Parks, Jr., said he had found the keeping of a shuttle chart of great assistance in the weave room. This chart shows which looms are using the most shuttles and enables the overseer to spot any looms using an excessive number and determine the cause.

J. L. Beaver, overseer of weaving, Pilot Mills Co., Raleigh, said, "I do not believe in overhauling with an extra man. I believe in overhauling the loom every time the warp runs out. If the fixer will carefully look over the loom and check every part, it will not need any regular, general overhauling. The overseer or second hand should follow that man and see whether he is checking properly." Mr. Agner said he agreed fully with Mr. Beaver.

"What is the best method of loom inspection?" was the second weaving question. Mr. Parks said "I think possibly the best method of inspection is for the overseer to look over a certain specified thing on a certain day. One day he can look for and concentrate on skinned quills; another day, the batteries; another day, some other item." He pointed out that a man simply cannot just walk through a room in a general tour and find out what is wrong. He must select on any trip through the room some certain topic or part and give intimate attention to it. (This is very much in line with the article on Overhauling, page 71, February COTTON — copies of which will be furnished to those requesting them. That article gives a complete schedule of machinery overhauling.—The Editor.)

Mr. Harden expressed the belief that the best time to make an inspection of the loom is when the warp is out. Mr. Agner agreed with this, stating that at one time he tried an inspection system which required each fixer to inspect the section of another, but stated this wouldn't work "because they wouldn't tell what they saw."

It was agreed that, when a fixer puts in a new shuttle, he should change the pickers, line the boxes with the reed, etc. (The reader is referred to a very complete and practical discussion of this subject on page 77 of the March issue of COTTON.—The Editor.) Mr. Mullen asked for the "life of a shuttle". While this is based on so many varying factors, it was agreed that the average would run around 45 to 50 weeks, and that "a shuttle to the loom per year would be a good life".

The last question discussed was brought up by Mr. Harden, who asked for opinions as to soaking, greasing, or otherwise preparing the shuttle before using it. Mr. Agner said, as to putting tallow on shuttles, "I think it is a pretty good thing, but you must have the right kind of tallow." He recommended a good grade of home-made tallow, not "compound" tallow. Another man told of his practice, which is to sandpaper the shuttles and fill the screw-eyes with tallow and let the shuttles sit over the week-end before putting them in the box. He said also that he had proven to his own satisfaction that putting tallow on a shuttle will not cause it to bounce any more than it would without the tallow. Mr. Harden said "I am convinced that tallow properly applied will cut down the wear on a shuttle."

Textile Code Developments

THERE were several prominent general developments in textiles in connection with NRA code administration during April. Johnson & Johnson, surgical goods manufacturers, who operate the Chicopee Mfg. Corp. plant at Gainesville, Ga., and the Chicopee Mfg. Co. plant at Chicopee Falls, Mass., have been constantly in opposition to the machine-hour limitation of the cotton-textile code, which affects their weaving plants, and which has repeatedly been called the cornerstone of the code by George A. Sloan, chairman of the Code Authority.

On April 2nd, at a public hearing before a deputy administrator in Washington, Russell E. Waton, vice-president and counsel for Johnson & Johnson, entered a plea to permit the operation of cotton-textile plants on four daily shifts of six hours each, with the agreement to pay the operatives as much for six hours work as is now paid for eight hours. Mr. Sloan and other members of the Code Authority vigorously opposed any breaking down of the machine hour limitation, which prevents operation of productive machinery—spinning spindles and/or looms—more than 80 hours weekly; declaring that to release the machine production limitation would result in chaos in the industry and in defeating the primary purposes of the recovery program in this industry.

During the latter part of March, Francis J. Gorman, vice-president of the United Textile Workers of America, created headlines in the general press by the charge, before a senate committee conducting hearings on the Wagner bill to create a permanent National Labor Board with broad authority, that cotton-textile mills were resisting efforts of their operatives to organize; that the minimum wages established in the code had become the maximum. Prompt refutation was made by Mr. Sloan before the senate committee on the following day as to the leveling of wages. T. M. Marchant, president of the American Cotton Manufacturers Association, issued a challenge for proof of the charges of Mr. Gorman, which was not answered with facts.

Later, Mr. Sloan issued a statement denying further charges of Mr. Gorman, stating in part, in reference to a charge by Mr. Gorman "that the employers in this industry have succeeded in driving down to the minimum wages provided in the code, the hourly earnings of skilled workers, including weavers":

"That statement was refuted by me before the Senate committee on Education and Labor and the supporting data are on record in that body. The record shows conclusively that the cotton-textile code, by preserving the wage differentials for the higher skilled groups, has done more than prevent minimum wages from becoming maximum wages—it has increased the maximum rates themselves as compared with pre-code conditions.

"The statement attributed to Mr. Gorman under date of March 23 goes on to say, 'If Mr. Sloan had gone beyond August of last year he would know that the average wage has dropped from 44 cents to 36 cents an hour.' With three hours' notice I appeared before the Senate Committee on March 22 to explain the results of operations under the cotton-textile code. The breakdown of statistics for August 1933 was presented because it so happened that these were in my possession in Washington at the time. But since an assertion is now made that the average has dropped from August to date, an examination of statistics collected from the entire cotton textile industry shows that the hourly rate for skilled workers referred to by Mr. Gorman is identically the same today as it was in August 1933.

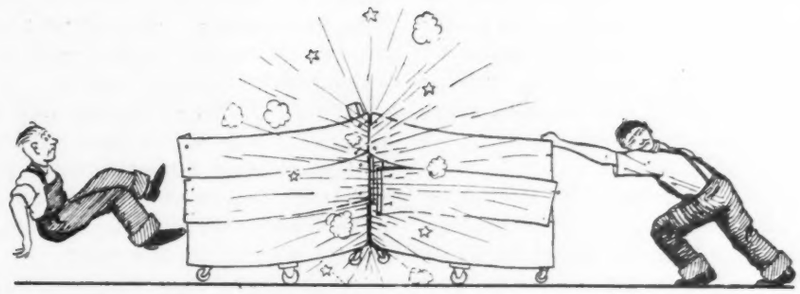
"The statement in question concludes by a reference to my testimony before the Senate Committee when I expressed the opinion that the industry, by and large, as a result of NRA, had come out of the red into a break-even position. Mr. Gorman maintains that the industry has not shared these improvements with labor. He says this in the face of an average increase in hourly wage rates for all workers in the cotton textile industry of 69 per cent, as compared with the hourly rate in March 1933. Moreover, the cotton textile industry's weekly payroll for February 1934 was 92 per cent greater than the 1932 average. I doubt very much if any industry in America has done as much under NRA in improving the earnings and purchasing power of its workers."

On April 9 National Recovery Administrator Johnson issued an order empowering the plant extension sub-committee of the Cotton Textile Industry Committee to examine into application for and to issue certain certificates for the installation of additional productive machinery by members of that industry. The order limits the cases for determination by the Code Authority to applications for the installation of productive machinery when (a) was, prior to such installation, registered pursuant to the provisions of subdivision (1) of the supplementary provision of the code, or (b) was, prior to such installation, the subject of a certificate issued pursuant to the provisions of subdivision (3) of said supplementary provision.

On April 10, Mr. Sloan announced on behalf of the Code Authority and the Consumers' Goods Industries Committee, that a potential outlay of $100,000,000 for capital goods equipment by the cotton textile industry during the next 18 months is indicated in a survey just completed by the Cotton-Textile Code Authority. The expenditure is conditioned on assurances to industry of the same constructive co-operation from the legislative branch of the government as has characterized its relations with NRA, according to Mr. Sloan.

Some 500 mills representing 15,000,000 spindles—mills both large and small, in New England and the South, were covered in the survey. Of the total potential expenditure, nearly $14,000,000 represents commitments already entered into for replacement machinery; and of the balance, 60 per cent would be spent for manufacturing equipment, 25 per cent for manufacturing plant construction and other construction including houses, power buildings, warehouses, transmission lines, etc., and the remainder for auxiliary machinery, repairs, etc.

Among "serious obstacles" which should be removed and permit the expenditure of this money were cited the Wagner and Connery bills, which are legislation of the type to "kill both confidence and enterprise", to quote one of the mills replying; the hampering effect of the Federal Securities Act; and other items of political uncertainty. "The difficulty with all these legislative obstacles is that they operate cumulatively along with other heavy burdens such as those imposed by the processing and other taxes," Mr. Sloan pointed out, "to push further and further into the background any hope to the owners of these enterprises profit from their investments and take from these owners to an increasing degree the benefits and rights of ownership and management."



Untangling "Traffic Problems" in the Weave Room

SOME practical suggestions on how to relieve congestion and confusion in the weave room by the proper laying out of work and routes of travel for various operatives . . . . . .

DO WE realize just how much of a problem our traffic in the weave room really is? We have grown so accustomed to seeing quill haulers, filling haulers, cloth haulers, warp haulers, sweepers, etc., busily plying up and down our alleys that we more or less accept occasional traffic snarls as either unavoidable or of no consequence.

With the coming of the multiple system, our traffic problem has expanded enormously. Instead of merely a weaver in the weaver's alley, we now find in addition a loom cleaner, a battery hand, a cloth doffer—and what have you. The alley is still the same width, but it has to take care of more people.

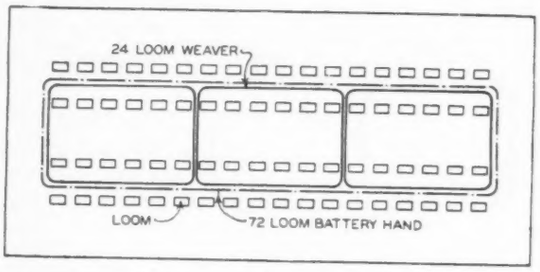
The back alley must accommodate the filling hauler, the quill hauler, the cloth hauler, the warp hauler and the sweeper—plus any casual traffic.

It is not uncommon for two truckers to meet head-on in an alley. Indeed, it is perfectly possible that all of these alley travelers should meet at the same time at one spot. Picture to yourself the resultant confusion. The alley is not wide enough for two boxes or trucks to pass, nor is human nature such that those going in one direction would willingly back out to the end of the alley in order to let those going in the opposite direction pass. Considerable strife and not infrequent fisticuffs result from these little episodes.

We are unable to do away with all these traffic snarls but we can do a lot toward reducing the seriousness of the disturbances and the consequent loss in time and money.

Since the weaver is the mainspring in the process of weaving, let us consider his case first.

We can give a weaver looms in two adjacent and parallel alleys instead of in the usual one long alley. This cuts down the length of the area which he must traverse in tending his looms. Not only is his job more compact and accessible, but he also has the pos-



Layong out the weaver's and battery hand's job

sible choice of busying himself in his clear alley when there happens to be someone obstructing his other alley.

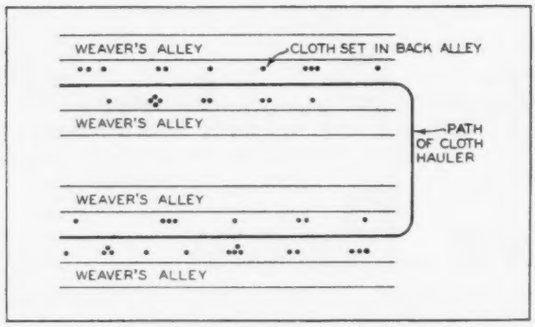
Likewise, the battery filler should have his job laid out in two parallel alleys. This will allow him to fill batteries in a circuit, never having to retrace his steps past full batteries. Since both the weaver and the battery filler have two alleys apiece, the probability of their getting in each other's way has been greatly reduced.

The Cloth Hauler

Now, let's take a look at the cloth hauler. It is the usual practice for the cloth hauler to push his truck up and down every alley in the weave room collecting rolls of cloth wherever he finds them. Here is a fruitful opportunity for us to save time, energy and footsteps. Why not have the cloth doffer or weaver set his cloth to a center alley rather than indiscriminately right or left? For instance, a back alley has a weaver's alley on either side of it; let the cloth from both of these weaver's alleys be set in this back alley. The benefit is obvious. By traversing every second back alley the cloth hauler now gets all the cloth but

covers only half of the floor space formerly covered. At the same time no hardship has been worked on the cloth doffer because it is just as easy for him to set his roll of cloth on one side of the alley as it is on the other. Of course this method is of no value where it is impractical to set the roll of goods on its end in the alley to await the cloth hauler.

Filling must be brought to the loom and empty quills must be carried away from it. The usual arrangement is to have filling boxes on either side of every second alley. The odd alleys are ordinarily "post



A suggestion for a cloth hauler's route

alleys". We can let the quill haulers use the post alleys entirely, leaving the filling alleys open to the filling hauler. This one arrangement cuts down on the traffic problem immeasurably because both filling haulers and quill haulers are necessarily "slow traffic" due to the nature of their job.

A good rule to make is, "Don't leave either full or empty filling trucks standing on the weave room floor space". They are always in the way and encourage the filling hauler to be lax in laying up his filling promptly.

Dividing the Jobs

Where two or more filling haulers are used, the problem arises, "How shall the job be divided equally?" A simple division of floor space or of looms serviced is insufficient because of the fact that all areas are not equi-distant from the filling pens or filling depot. This fact necessitates either a foot-pound basis or some division which compensates for the difference in distances. One method of division which has proven very successful is to lay out the filling hauler's job from a point in the center of the room giving each filling hauler one half of his job on one side of the center of the room and the other half of his job on the opposite side of the center and equidistant. Thus, the filling hauler who has half of his territory along the wall nearest the bobbin pens also has another half job lying along the wall which is furtherest removed from the pens. In this manner any number of jobs can be laid out, each having an average distance at the center of the room.

Warp hauling and its attendant problems of empty beams, patterns, etc., is next in order. Empty beams and full warp beams waiting to be used are two things which cannot be tolerated in the alleys if any semblance of traffic system is to be used. They cannot be passed, slid under, or jumped over. If the loom fixer hauls his own warps, the procedure is just the reverse to that which should be pursued where a regular warp hauler is used.

Where the fixer hauls his own warp, the best arrangement is to let the fixer roll his empty beam and pattern to their respective destinations, bringing his full warp back to the loom on his return trip. This method leaves the alley clear before, during, and after the tying on of the new warp.

If a regular warp hauler is used, he should carry out the full warp beam to the loom and exchange it for the empty beam and pattern. This method achieves the same result—an unblocked alley.

Loom Cleaning Methods

Do you use compressed air in cleaning your looms? If you do, have you planned your method of handling the air hose in such a way that there will be no air hose across a trucking alley? A little systematic planning here will save hours of time and good hard U. S. dollars. If your weavers do their own blowing-off, it is well to let your sweeper have oversight of the movement of the air hose from one weaver to another in order to secure the most complete co-ordination between the cleaning and the sweeping. Remember that a pile of sweepings may be just as great an obstacle in an alley as a filling truck.

These remedies may not fit any of your conditions, but a careful study of your own particular traffic problem is certain to result in some better system than you are using.

Quality of Cotton Carry-Over in Relation to the Crop

A report on the grade and staple length of the cotton carry-over for the United States as related to the domestic supply for the period 1928-29 to 1931-32 has been issued by the Bureau of Agricultural Economics, U. S. Department of Agriculture. The data presented in this bulletin indicate that:

The proportion of the supply of longer staple cotton carried over is very much larger than the proportion of the supply of shorter staple cotton carried over.

The average staple length of the cotton in the carry-over is consistently greater than the average staple length of both the previous crop and the supply of which the carry-over is a remainder.

The carry-over does not include large quantities of "unspinnable" cotton, nor has it in the years carried by the publication been largely made up of untenderable cotton.

That portion of the carry-over stored in consuming establishments on August 1 of each year contained a larger proportion of the longer cotton than that stored outside of consuming establishments.

The proportion of the supply of the lower grades carried over has been larger than the proportion of the supply of the higher grades carried over.

This information is contained in Statistical Bulletin No. 45 available on request to the Department.

New Sisal Bagging for Covering Cotton Bales

By Curtis Vinson

THE introduction last year of a new open weave sisal bagging for covering cotton bales, has resulted in some thorough tests with this type of bagging by cotton shippers and a number of mills, whose reports are of especial interest to textile mills.

Particularly in recent years, some ginners have been using light, second-hand substitute material for bagging, a material obtained by patching together old creosote sacks, fertilizer sacks, coffee, sugar and gunny sacks. This, in addition to contributing to the unsightly appearance of the American bale, provoked criticism, especially among foreign spinners, not only because it often was dirty and smelly, but because of its rough, harsh texture and the tendency of fibers from the junk wrapping to mix with the cotton and interfere with proper processing.

Some of this inferior stuff was made of sisal, and spinners in registering their objection to it employed the general term sisal. A recent addition to the junk cloth came in the use of second-hand coffee or cocoa bean sacks, made out of very fine, hard twisted sisal yarns, closely woven together and forming a harsh cloth. This increased the objection already prevailing and added to the unpopularity of sisal for use in bagging material.

Aware of the unpopularity of the junk bagging among spinners, one of the large American manufacturers of standard jute bagging brought out in 1932 a new open weave bagging made of new sisal fiber to compete with it. This was offered as a good, strong, attractive bagging, a little lighter in weight than the standard jute bagging and cheap enough to compete with the junk material; but not as a competitor of standard jute bagging. But the word "sisal" had already become a disturbing word in the spinning industry, and the new bagging fell heir to all the onus that the word carried. Tests therefore were made of cotton baled in the new bagging, and these bring out some interesting comparisons of sisal and jute as cotton bagging materials. The reports of these tests, from cotton mills, ginners and merchants in Georgia, Alabama, Mississippi, Texas and elsewhere, set forth that actual experience during the present season in handling cotton wrapped in the new open weave sisal bagging has shown:

That the cotton processes as well and in some instances better than cotton covered with the usual types of bagging.

That the cotton does not adhere or cling as tenaciously to the sisal bagging as to the jute, that it is possible to pick the tare cleaner and that less sisal goes with the lint into the spinning processes.

That a smaller number of end breakages have resulted with the cotton tested than with cotton from jute wrapped bales.

That it requires less labor to pick the lint from sisal tare than from jute.

That the new open weave sisal bagging is stronger and makes a more attractive bale than the junk bagging.

That fewer sisal fibers were found around opening machines and picking machines than usually is the case where jute bagging is used.

That there is no inclination on the part of the mills reporting to discriminate against sisal covered bales.

That sisal fibers do not have as pronounced a tendency as jute to curl and mix in with cotton fibers, as sisal fibers are rather harsh and stand apart from the cotton fibers.

(This latter point seems particularly important since it has to do, in a major way, with what might be called the real question of dispute among spinners. That is, the question of whether the cotton clings more tenaciously to the long, hard sisal fiber or to the shorter, softer, more pliable jute fiber. Some English spinners, taking a stand exactly opposite to that of the American mills quoted, have declared that it is almost impossible to get sisal fibers out of the cotton, that the sisal fibers are tough and thick and that the cotton fibers stick to them with much more tenacity than to jute fibers.)

In this connection, R. D. Harvey, superintendent of the Lindale, Ga., plant of Pepperell Mfg. Co., commenting on a test of 20 bales of cotton covered with sisal bagging, said:

"In opening up these bales we found that the cotton did not stick to the wrapping quite as much as in the jute covered bales we have been using. . . If anything, there were less sisal fibers around the opening machines and picking machines than we usually find of jute. After the cotton had been put through our cards, we were unable to locate any sisal fibers on our drawing, fly frames and spinning frames. From the results of the tests, we had just as soon have our cotton covered with this bagging as the jute bagging we have been using. Should we have any preference, it would be in favor of the sisal covered bales, as the tests that we have just completed have proven that this bagging has a few advantages over the jute."

Among the American mills that have made tests of sisal baled cotton is the Exposition Cotton Mills, Atlanta, Ga. Reporting on the results of the test, an official of this company cited his superintendent's report to the effect that lint cotton did not cling to the sisal covering as much as to jute bagging and expressing the belief, from observations made during the test, that sisal fibers, being longer and stiffer than jute fibers, would not mix and cling to the lint cotton as much as jute fibers. The executive added that, in view of his superintendent's report, his company would not discriminate against bales covered with open weave sisal bagging.

The Saratoga Victory Mills, Inc., Albertville, Ala., Bonham (Texas) Cotton Mills, and Mexia (Texas) Cotton Mills, reported figures on end breakages. The Saratoga mills reported the breakages per thousand spindle hours, on 40s carded soft twist, was 44 ends on cotton tared with sisal and 54 ends on cotton wrapped with jute. The Mexia plant reported ends down at the rate of 26 per thousand spindle hours with sisal wrapped cotton compared with 31.2 average on previous tests of regular run cotton. The Bonham mill reported 48 ends down per thousand spindle hours in a test of sisal wrapped cotton compared to 51 for the average record on 24s warp yarn.

CURRENT TEXTILE TOPICS. . . .

Talk of the Month

UNGOVERNED economics developed its "poverty in the midst of plenty". Controlled economy started the country on the road to recovery, but overreaching of the NRA program brought a new complication: bewilderment in the midst of activity. For the second quarter of this year opened with private enterprise in a position to go actively ahead, with a great impetus from the general improvement of buying in the first three months of the year, except that the involved political entanglements were a basis of undoubted confusion. Thus the cotton industry, clearly one branch that stands to profit from the New Deal, has with others been disturbed by the inconsistencies of the government program.

Bewilderment in the Midst of Activity

Among the contrasts in the national activity, both directly concerning textiles though one an outside factor, are the Bankhead cotton control bill and the securities legislation. One of the reasons for the prompt movement for cotton-control legislation was merely the general desire of the growers therefor. By contrast, long months of testimony from industrial and other interests as to the obstacles that the rigid securities bill have placed upon business seemed to be treated like so much chaff. In this bill alone the recovery program has been severely hobbled, witness the complaint in the middle of April from a number of cotton-goods merchants that there would be no resumption of broad activity in this industry until securities legislation was finally determined.

Among other things wherein the government participation is considered obstructive, the cotton and rayon textile groups cite the processing and compensatory taxes. The worst phase of the inconsistencies is the danger that the unsound parts of the NRA are tending to obscure its advantages and even create antagonism to them. The cotton industry, if any, knows that maintenance of the code in its primary essentials is its salvation. It has taken the better part of a year to extend the codes to other industries and that in itself has been an obstacle to the progress of textiles, because broad recovery depends upon normal relationships of one economic group with another. Therein is the direct bearing of the securities measure upon cotton manufacture.

Aside from the uncertainties incident to continued economic regulation measures, the second quarter of 1934 began with widespread evidences of strong recovery under way. The statements of such men as Myron C. Taylor, chairman of the United States Steel Corporation, Samuel M. Vauclain, chairman of the Baldwin Locomotive Works, Charles M. Schwab, chairman of the Bethlehem Steel Corporation, and Alfred P. Sloan, president of the General Motors Corporation, were significant of the most confident spirit since 1929. The retail business reports were all outstandingly favorable, even if the increased volume was spotty because some districts and classes were doing the most buying and others remained behind.

Two conspicuous changes under the textile codes are the stability maintained by sellers through periods of slackness and the growing evidence that control of production is forcing buyers to a more reasonable ordering ahead. When production cannot be extended to meet pressing demand for quick shipment of goods it is incumbent upon buyers to look further ahead. That condition may be demonstrated more conclusively during the coming summer than in the past year as the end of hand-to-mouth buying. At any rate, a tight situation this spring in the finishing branch as a result of the code has led to predictions of more even operations and firmer prices the coming summer, with a consequent similar development in gray cotton goods. As far back as the middle of March, a tendency of buyers to begin considering their fall requirements was noted.

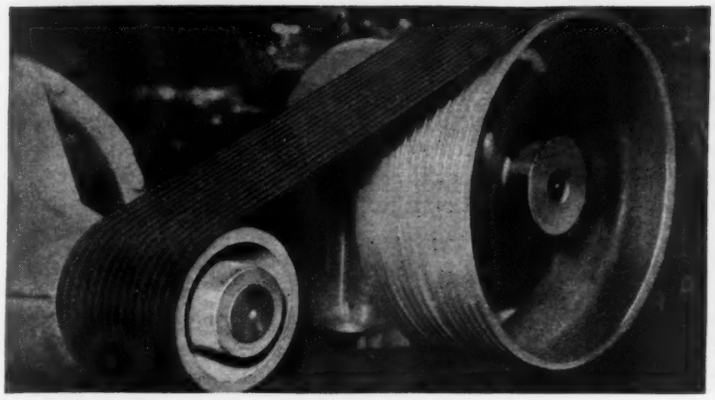
In this connection, the experience in elimination of overproduction is a doubly supported argument against such modification of the code as proposed once more in March by Johnson & Johnson. The forty-hour week was adopted for the double purpose of adjusting production to demand and spreading employment.

An interesting suggestion of Peter H. Van Horn, chairman of the silk textile code authority, is that the various code authorities should get together to attack common problems under the NRA and that many have "lost the vision of the golden opportunity offered through self-government under the NRA." It is certain that co-operation must be exerted if the recovery is to continue. A significant statement in the auspicious ten-year survey of the Association of Cotton Textile Merchants of New York is that "with the slower growth of population recorded during recent years, it is apparent that future gains in consumption volume will continue to be closely related to betterment in individual incomes."

BIG gains in retail business, anxiety over the possible imposition of a shorter week in the mills, the rush of finishing business with its demonstration of limited capacity, troubles of some units over the labor situation, decline of business in the unfinished goods and withal a number of constructive changes were the varying favorable and unfavorable features of mid-April in the cotton industry of New England. The northeastern section faced a seasonal slackening of mill orders the same as the rest of the country, aggravated by the uncertainty of private business be-

New England Mill Situation

THEY'RE PERFECTLY MATCHED!



Best results on Multiple V Belt Drives depend on right design and construction

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GOODYEAR EMERALD CORD V BELTS

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Specified by the G.T.M. for efficient, economical service in textile mills

The multiple V Belt drive is a most satisfactory method of power transmission *if and when you have the* RIGHT *belts.*

Out of an intimate practical experience with textile mill needs, Goodyear—one of the world's largest users of cotton—has developed and perfected the V Belt that takes the *if* and *when* out of the equation.

This belt is the Emerald Cord V Belt.

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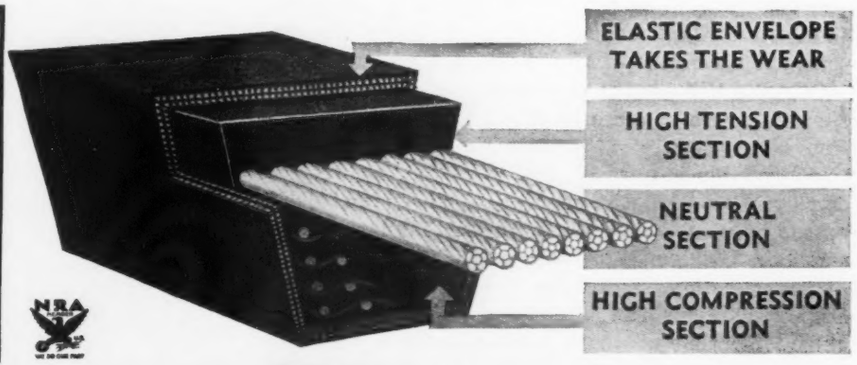
3. Low stretch and uniform elasticity.
4. Load-carrying section concentrated in the neutral section—subject neither to extreme tension nor compression when flexing over pulleys.
5. Long flexing life and high resistance to fatigue or breakdown of the structure.

A set of Goodyear Emerald Cord V Belts is an ideally *matched* set. Each belt carries its full share of the load. Accurately specified to their work by the G.T.M.—Goodyear Technical Man—these belts have an admirable record for long, low-cost, trouble-free life.

Why not talk V Belts with the G.T.M.? He may be able to save you money. Write Goodyear, Akron, Ohio, or Los Angeles, California, or your nearest Goodyear Mechanical Rubber Goods Distributor.

Goodyear is represented in the South by authorized Goodyear Mechanical Rubber Goods Distributors conveniently located with relation to your mills and able to supply promptly all Goodyear Mechanical Rubber Goods for the textile industry



THE GREATEST NAME IN RUBBER

GOODYEAR

TEXTILE BELTING

MADE BY THE MAKERS OF GOODYEAR TIRES

cause of the vague state of mind as to how far business could proceed freely or on the other hand how far it was to be governed from Washington.

Good backlogs were carried over into the second quarter, as the result of heavy buying in the first six months of the year. However, the maintenance of heavy operations, which incidentally marked a heavy movement of raw cotton to the mills of New England, was steadily cutting into these backlogs without compensating new orders. At the same time the notable consumption of finished merchandise was a continuing healthy factor and its effect upon the finishing industry has been very propitious. Workers have been taken on by hundreds since last year. Yet the regulation of industry under the codes means that capacity will still be limited for finishing and that buyers will be able to supply their full requirements only by reasonable anticipation.

Many individual items of interest for their bearing upon progress of the industry at large have been found, in the face of the recent uncertainties incident to affairs as affected by Washington. Latest of these was the purchase of the mill of the Holmes Mfg. Co., New Bedford, by the Kendall Company of Boston. This plant, of 64,520 spindles, that has been idle for three years, will begin operations again as soon as made ready. The new owners, it is understood, plan to install looms and operate as a weaving mill. At the start only a portion of the present spindles of the plant, formerly a yarn mill, will be run. It is estimated that 250 workers will be employed at the start. The expected operation, however, will probably bring the roll up to where it will mean about $250,000 annually.

Another New Bedford project under way is the expansion of rayon operations by the Booth Mfg. Co., through the recent installation of processing equipment for the preparation of warps and the starting of winding equipment for filling yarns for the looms. Significant of expansion in the five important Maine mills—Bates, York, Androscoggin, Edwards and Hill—is the statement that the 1933 sales showed a gain of more than $4,000,000, not to mention a net profit of $175,036. The great Amoskeag plant at Manchester, N. H., moreover, showed an employee list of 10,050 starting April, against 6,683 a year previous, and the payroll for January-March was $1,823,000 vs. $1,039,000 in 1933.

This section, especially in Massachusetts and Connecticut, has run into labor troubles, however, and at the time of writing some of these were unsettled. The Pequot Mills at Salem were subjected to a demand for an increase in wages of 25 per cent, as well as the closed shop and privilege of collecting union dues in the plant. A strike in the Soule Mills at New Bedford was quickly settled but unrest was widespread in Connecticut, with demands for 1929 wages. John J. Egan, secretary of the Connecticut Federation of Labor, was quoted as asserting that "no company should declare any dividends until the 1929 wage level is restored". Outside the textile industry, notably in the metals group, many increases of 10 per cent were made at the time the broad union movement was beginning in the State.

Fall River was the chief sufferer in the textile industry with a complication of strikes in three of the large mills, involving 8000 workers. In the middle of April the city stood in danger of serious economic loss, the more deplorable because Fall River had suffered so drastically from long years of depression. The case was intensified because, as stated the Fall River Herald News, the city had the cheering news of new orders awaiting the local mills. The mill industry has become recognized as once more a paramount community interest in Fall River. Fortunately the matter was quickly adjusted, with agreements for recourse to arbitration after ten days of the strike.

COMMENT ON THE COTTON MARKET

New Orleans, April 14th, 1934.

THE recent labor troubles in the auto and steel industries, the railway wage dispute, the delay in Bankhead crop control legislation, apprehension as to the proposed regulation of exchanges, and the uncertainty attending the policy of the government as to disposition of its large holdings of cotton in the South, were depressing influences in the cotton market the past month. Fortunately the more important of the labor disputes were settled, the Bankhead bill made slow but steady progress, with prospects of being enacted in the very near future, and the proposed exchange regulation measure was modified. Nevertheless, compared with about one month ago, the cotton contract market shows a decline of about $2.50 per bale. Failure of the market to make favorable response to the agreement reached on the Bankhead bill in conference was attributed mainly to the excess cotton tax being lowered from 75 per cent of market value to 50 per cent, the tax to be paid at time of sale, instead of at the gin, which was disappointing to the optimistically inclined.

Compared with last season, the New York Cotton Exchange Service estimated the world's consumption of American lint cotton during February at approximately 1,101,000 bales vs. 1,110,000, and for seven months, August through February, about 8,189,000 bales, against 8,087,000, leaving the world's stock of American at the close of February at about 16,139,000 bales vs. 17,874,000.

BRITISH BOARD OF TRADE REPORT FOR MARCH

Year—	1934	1933	1932
Exports of yarn, pounds	12,000,000	13,000,000	14,000,000
Exports of cloth, yards	170,000,000	210,000,000	203,000,000

CENSUS BUREAU REPORT FOR MARCH

United States— Bales—	This season	Last season
Consumption of lint cotton in Cotton Growing States, March	429,441	413,292
Consumption of lint cotton in New England States, March	97,783	69,599
Consumption of lint cotton in All Other States, March	16,466	12,292
Consumption of lint cotton in United States, March	543,690	495,183
Consumption of lint cotton in Cotton Growing States, 8 months	3,145,081	3,133,927
Consumption of lint cotton in New England States, 8 months	685,121	513,763
Consumption of lint cotton in All Other States, 8 months	115,102	100,883
Consumption of lint cotton in United States, 8 months	3,945,304	3,748,573
Mill stocks, March 31st	1,649,807	1,343,114
Stocks in public storage and warehouses, March 31st	7,852,780	8,901,203
Stocks in mills, public storage and warehouses, March 31st	9,502,587	10,244,317
Stocks in mills, public storage and warehouses, February 28th	10,293,364	10,827,196
Active spindles during March	26,503,876	23,448,134
Active spindles during February	26,355,498	23,669,146

While British Board of Trade returns for March were not encouraging, some consolation was derived from the favorable showing of domestic consumption for last month. Late New York press advices are to effect that in the gray cloth division of cotton goods it was said that inquiries made reflected unmistakably a desire to keep in close touch with the trend of buying and with the ability of manufacturers to continue to hold for current asking prices after

IN 1928 THERE WERE 775,000 SPINDLES "ON CORK"

NOW THERE ARE 6,150,000!

As profits **DROPPED,** *mills reduced overhead with seamless cork cots*

AN 8-to-1 increase in less than six years! Why? Because mill owners everywhere have discovered that cork is the best and most economical roll covering—and they've seen it proved, time and time again, *in actual performance.*

One South Carolina mill is saving $20.55 per million spindle hours. The roller bill in another mill is about ⅓ of what it used to be. Many others have saved from 60% to 77%. Still another mill is saving $5,560 annually. "Our spinners have fewer ends down on cork," say mill superintendents. All mills experience fewer eyebrows, fewer lap-ups, fewer piecings.

That's why the great increase has taken place so rapidly—*taken place* when mill profits were lowest!

Armstrong's Seamless Cork Cots can reduce costs and produce equal or better yarn in *your* mill as they have in many others. Armstrong Cork & Insulation Company, Textile Division, 923 Arch Street, Lancaster, Penna.

Armstrong's

SEAMLESS CORK COTS

For Spinning and Card Room Rolls

a long period of quiet business. In some quarters it was said that the tone of inquiries forecasts activity just as soon as the Washington uncertainties lift.

MOVEMENT TO MARKET, EXPORTS AND SPINNERS TAKINGS, ETC.

Week ended, April 13th.— Bales—	This season	Last season
Week's in sight (marketed)	104,000	126,000
Since August 1st	11,647,000	12,219,000
Week's exports from U. S., inc. Canada	41,000	84,000
Since August 1st	6,345,000	6,402,000
Week's spinners takings of American (world)	254,000	241,000
Since August 1st	10,977,000	10,413,000
Stocks at all U. S. ports today	3,073,000	4,243,000

WORLD'S VISIBLE SUPPLY OF COTTON, APRIL 13TH

Bales—	This year	Last year
American	7,424,000	8,977,000
Of other kinds	2,405,000	1,869,000
Of all kinds	9,829,000	10,846,000

Recently Washington advised: "Agriculture Adjustment Administration announces that government holdings of cotton will not be dumped on market or offered for sale in a manner which would tend unduly to disturb the price situation."

As to preparations for the next American crop, sales of fertilizer continued large, the soil is reported generally in good condition, but because of rains, low temperatures and frosts, which necessitated much replanting in the Rio Grande section, and delayed field work in other districts, planting is reported slightly behind the average, having evidently lost much of earlier prospects for an unusually early start. However, with the soil reported in splendid condition for planting, rapid progress could be made, weather permitting, during the remainder of the month and during May.

According to returns to the New Orleans Cotton Exchange, sales of fertilizer tags during March, continued large, as noted by the following:

STATEMENT OF FERTILIZER TAGS SOLD IN NINE COTTON STATES

Tons— Year—	1934	1933
During March	890,347	536,790
August through March	1,584,848	901,408

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1934	1933	1932	1931	Normal
Nov. to March, inclusive	11.92	10.25	15.51	12.92	10.20
In March	3.38	1.94	1.44	2.50	2.08

Recent private estimates as to farmers' intentions to plant this year range from 27,302,000 acres to 29,389,000 acres, the latter being the latest of private forecasts issued thus far this season, and is much larger than indicated earlier in the year. Apparently farmers intend to plant a larger acreage than the government hoped for during the acreage reduction campaign when it was working to try and hold the acreage down to about 25,000,000 acres. Evidently some new land and some new farmers are going into cotton this year. But if the crop is to be limited to 10,000,000 bales, tax free, any excess cotton, if any, could not be marketed without paying the 50 per cent ad valorem tax, which is something to reckon with, if the Bankhead bill, in its present form, meets with the approval of the House, and is signed by the President. The government's first cotton acreage estimate for this year will not be released until about July 8th.

Government's Weekly Weather and Crop Summary for Week Ended April 10

Washington—"Planting is slightly behind the average, but became rather active during the week in many places, though there was interruption by wet soil in the western part of the belt. Intermittent fields have been planted to the northern portions of Texas, and a little local seeding has been done in southern Arkansas. In the east, planting made excellent progress in southern Georgia, and a little was put in on the coastal plains northward to southern North Carolina near the average date for beginning of planting operations."

Meanwhile there was much of low temperatures, below normal, in the interior, with light to heavy frosts in north-central and northeastern localities, which were followed later by rather general rains, heavy in localities, as the week draws to a close. A period of dry, warm weather is evidently desired to permit of favorable progress of planting and germination of seed.

While there was a seasonal decline in general business the past week, the rate of decline was very mild on the average, as retail sales continued to advance, and leading wholesale markets turned unexpectedly brisk. The general trade outlook remains promising for the important automobile industry and for steel, in which greater activity is predicted for the future. Recently the Senate Agriculture committee unanimously reported on the omnibus silver bill providing nationalization of domestic silver, purchases of silver from foreign sources until the price reached $1.29 an ounce, and exchange of silver for agricultural exports at a 25 per cent premium. Today, however, President Roosevelt was said to be opposed to silver legislation at this session because he wants to work out fully the present administration silver purchasing plan. The attitude of the President, as to further silver legislation during this session of Congress, is reflected in the sharp decline in cotton and grain values today.

What the Southern Mills Are Doing.

Clinchfield Mfg. Co., Marion, N. C., have made extensive improvements in their plants including the installation of Barber-Colman automatic warpers and spoolers; one process picking; Taylor automatic temperature controls on slashers; Curtis & Marble shearing machines; and individual motor drives on spinning frames.

Aileen Mills, Biscoe, N. C., were recently sold at auction to B. W. Brooks, of Memphis, Tenn., and associates, who, it is understood, will operate the plant.

A new Foster winder has been installed at the Double Shoals Mfg. Co., Double Shoals, N. C.

Randolph Mills, Inc., Franklinville, N. C., have made considerable improvements in their plants, including the installation of additional napping machinery at Mill No. 2 and dyeing equipment at Mill No. 1.

Virginia Cotton Mills, Swepsonville, N. C., are constructing a throwing department, and are also installing 47 Jacquard looms purchased from the Savona Mills, Charlotte, N. C.

Clinton Cotton Mills and Lydia Cotton Mills, Clinton, S. C., are installing a new steam turbine plant to generate their own power.

Proximity Manufacturing Co., Greensboro, N. C., are making a complete installation of Abbott circulating spindle cone winders at the Proximity mill. These winders replace older equipment.

Borden Mfg. Co., Goldsboro, N. C., are installing two high speed Foster winders and one-process picking.

Construction is nearing completion on the Greensboro Weaving Co., Greensboro, N. C., to manufacture silks. It is reported that 400 looms will be installed. J. Spencer Love is among the principals.

Directors of the Inspiration Hosiery Mills, Inc., Wytheville, Va., recently authorized installation of 12 additional knitting machines.

Paul Knitting Mills, Inc., Pulaski, Va., are installing 20 additional automatic seamless knitting machines, and 10 additional 300-needle machines.

Gardiner Waring Co., Inc., Florence, Ala., have purchased the Bassett Knitting Mills, Bassett, Va., and will operate it as Bassett Knitting Mills, Inc., producing men's and boys' ribbed underwear.

Lyerly Full-Fashioned Hosiery Mill, Hickory, N. C., are erecting an addition to cost approximately $10,000.

Morristown Knitting Mills, Morristown, Tenn., have purchased the machinery and equipment of the Spring City Hosiery Mill, Spring City, Tenn.

Clayson Knitting Co., Star, N. C., which began operations in the latter part of 1932, with 7 knitting machines, 2 ribbers and 2 loopers, now have in operation 21 knitting machines, 6 ribbers and 4 loopers. C. V. Richardson is manager and owner.

Charles H. Bacon Hosiery Mill, Loudon, Tenn., is building a three-story addition to contain approximately 75,000 square feet of floor space.

Quote:

"The proper blending of cotton is now receiving the important consideration it deserves."

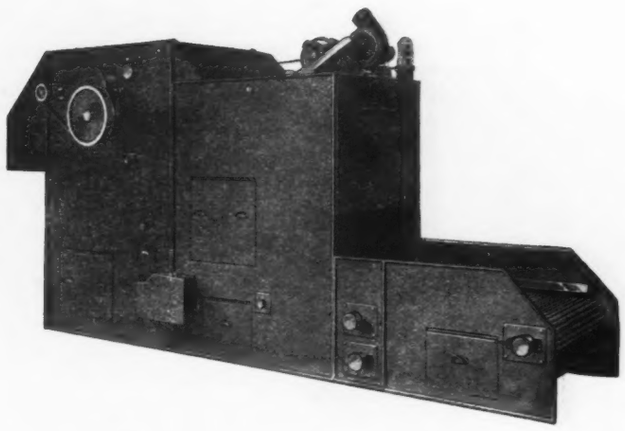
—COTTON, February, 1934

Is it receiving YOUR consideration?

The Saco-Lowell F-7 Cleaning and Blending Feeder was designed to handle present-day cotton — to blend as well as clean the stock.

A recent test showed that three Saco-Lowell F-7's were taking out 30% of the total foreign matter removed by the entire opening equipment in this mill.

Only by proper blending—to say nothing of cleaning—are uniformly good results possible.



F-7 CLEANING AND BLENDING FEEDER

Write for descriptive and detailed catalog

SACO-LOWELL SHOPS

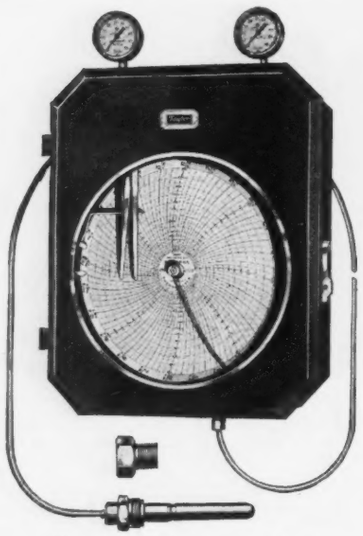
147 MILK ST., BOSTON, MASS.

CHARLOTTE, N. C. ATLANTA, GA.
GREENVILLE, S. C.

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

"Fulscope" Recording Regulators

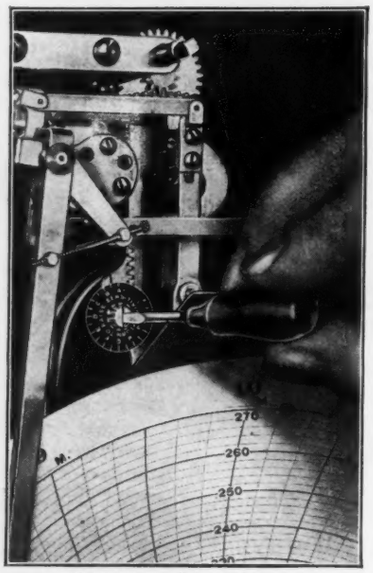
The Taylor "Fulscope" regulators, marketed by the Taylor Instrument Companies, Rochester, N. Y., embody the universal sensitivity adjuster which, it is pointed out, provides a full range sliding adjustment by which the regulator performance can be perfectly balanced for any degree of apparatus time lag. A simple screw-driver adjustment on a graduated dial gives throttling or on-and-off diaphragm valve action, whichever provides the desired type of control. Another important feature is that the regulator mechanism and means of adjustment of all these regulators is the same,



New recording regulator

whether for controlling temperature, pressure, rate of flow or liquid level; differing only in the means of actuation. This, it is explained, insures uniformity of instrument operation and processing results on either continuous or batch processes, quick and thorough training of operators, and interchangeability of parts. New lightweight duralumin is used in the mechanism, with practically frictionless bearings, and other simplications and refinements.

Regulator action can be readily converted from direct to reverse, or vice versa, without addition or substraction of parts, it is explained. Temperature or pressure regulators are readily adaptable to applications requiring a different temperature or pressure range by simply substituting a tube system and chart with the required range; temperature instruments are readily



Interior of regulator

convertible to pressure instruments and vice versa.

Control is maintained in the convential manner by regulating the flow of air pressure to the diaphragm valve in the controlling medium line in response to changes in the apparatus under control. A constant 25-pound air pressure supply for actuating the diaphragm valve is recommended; but should the pressure occasionally rise above or fall below the recommended figure, a novel compensating device is provided to maintain the desired control until normal pressure is restored. The case is in two styles, for face-mounting or for flush-mounting on panel boards. A Warren Telechron electric chart-driving mechanism is standard equipment; a spring-driven mechanism is optional.

* * *

"Clearacot" Roll Clearer

A. C. Lawrence Leather Company, Peabody, Mass., have added to their line of products a new product known as "Clearacot", a newly perfected roll-clearer for spinning mills. This new roll-clearer is made of virgin wool exactly as it grows on the sheep, and its base is the animal's skin, wool and skin being tanned together so the wool will not pull out, it is explained.

The company engineers claim that these new "Clearacots" aid in the spinning of better yarns, cleaning the rolls better and permitting fewer neps and slugs; that they function as well when old as when new. It is explained that with "Clearacots" there are no torn cots at the pins.

* * *

Protection for Metal Surfaces

L. Sonneborn Sons, Inc., 88 Lexington Ave., New York City, have announced the development of S. R. P. metal protective coatings, for preventing and checking erosion and corrosion on exposed metal surfaces. These coatings, it is stated, may be applied successfully over rusty surfaces without any previous preparation. Tests, the company states, show that these coatings withstand severe conditions, such as exposure to sulphuric acid, hydrochloric acid, ammonium hydroxide, strong alkalis, hydrogen sulphide, etc. They state that the absence of microscopic pores creates as impermeability of the film, and that a dense continuous coating is formed through a blending of the completely oxidized, inert and chemically stable natural element used with special vehicles.

* * *

"Textiles and the Microscope"

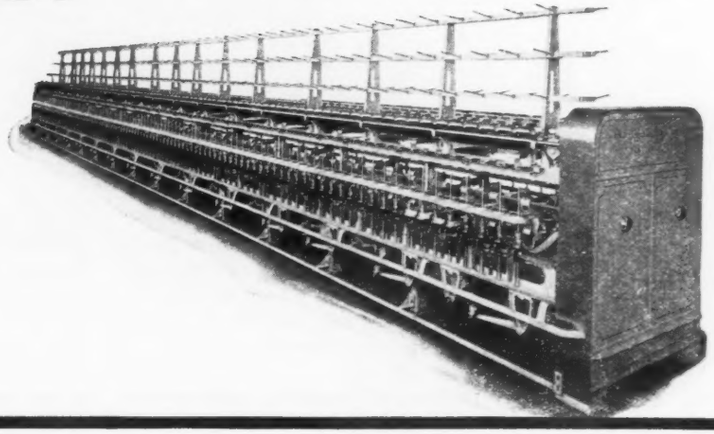
A new manual of textile microscopy has been published by McGraw-Hill Book Company, 330 West 42nd St., New York City, under the title "Textiles and the Microscope", by Edward R. Schwarz, assistant professor of textile technology, Massachusetts Institute of Technology. It is a concise, comprehensive and practical manual on the use of the microscope by textile technicians, and describes the available equipment as to the microscope's advantages and limitations, its methods of use, including the preparation of specimens, and its application to the analysis of fabric, yarn and fiber. It is described as essentially a working manual, planned to enable the reader to undertake textile microscopy without any other preparation, and to indicate its many avenues of usefulness. Nevertheless, many data and microphotographs are included that should make the book of frequent reference value in identifying fibers, making quantitative and qualitative analyses, etc. The book contains 329 pages, and 271 illustrations. The price is $4.00 per copy. It may be secured direct from the publishers or through the Book Department of COTTON.

* * *

Detroit Traps

Nason Mfg. Co., New York City, is now exclusively manufacturing the full line of "Detroit" steam traps, including the return, vacuum, combination and separating traps, and the "Detroit" receiver. The principle of the "Detroit" trap is an arrangement of valves, actuated by a tilting tank through an arrangement of levers. The tank, mounted eccentrically, on hollow trunnion, is held in horizontal position when empty

Making Lower Twisting Costs a FACT instead of a Theory . . .



FEATURES

Increase in ring diameter up to 50 percent and more.

Traverses increased as much as 5 inches over old standards.

Spindles designed for high speeds and heavy loads.

Pull of yarn from creel is free, easy and unobstructed.

Gearing permits a wide range of twist.

Reversible tape drive. New design Tension Device allows proper tension on tape, so as to insure steady spindle speed without causing undue strain on the spindle bolster.

Frame is sturdily built and properly balanced throughout to minimize vibration.

THE theoretical advantages of large package twisting are well known: increased production and reduced twisting cost due to fewer doffs; costs in subsequent processing also should be reduced because of the larger supply, fewer knots and the possible elimination of rewinding.

However, these advantages have been largely nullified in the past, because of the fact that, as the size of the ring was increased, it was found necessary to make a corresponding decrease in the speed of the spindle, thus cutting down production.

H & B Large Package Twisting is offered to the trade with the assurance that the necessity of reducing the spindle speed has been eliminated in almost every case. For example the diameter of H & B rings has, in many instances, been increased as much as 50 percent and more without any decrease whatever in spindle speed, and in many cases it has been possible to actually increase the speed of the spindle.

This important advance in twisting is due to numerous factors, including proper clearance and even tension of the yarn in the creel, correct angle of pull from the feed rollers, and proper design of spindle and drive (positive, minimum slippage of tape, etc.). A very important factor is the size and design of the ring for each particular job, in combination with a properly balanced traveler, which at the same time allows for longer traveler life.

The knowledge on which this progress is based is not something that can be duplicated overnight. It has been gained by many months of painstaking experiments and its value to you can be many times the price that you pay for the new H & B Twisters.

Tell us your twisting problem and we will tell what we can do for you. No obligations of course.

H&B AMERICAN MACHINE COMPANY

Cotton Preparatory and Spinning Machinery

PAWTUCKET, RHODE ISLAND

BOSTON OFFICE ● 161 Devonshire St. ATLANTA OFFICE ● 815 Citizens & Southern Natl. Bank Bldg.

H&B LARGE PACKAGE TWISTER

by means of large counterweight. When the tank fills with water, through the hollow trunnion, the counterweight is overbalanced and the tank tilts, actuating the valves. The trap not only traps condensed steam, it is explained, but permits condensation to be turned into live steam with a minimum of fuel.

* * *

Quiet Operating Motors

A four-page illustrated leaflet entitled "Quiet Operating Motors" has recently been issued by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., describing motors for use in buildings such as schools, churches, hospitals, hotels, apartment buildings, libraries, and in many parts of large public buildings, where it is essential that there be no objectionable noise. The leaflet describes the method of individual testing of these motors for quietness, their distinctive features, construction, application and control.

* * *

Novel Variable Speed Transmission

A novel self-adjusting, positive variable speed transmission for fractional horsepower duty, known as the Link-Belt V. R. D. (variable roller drive) has been announced by the Link-Belt Company, 910 South Michigan Ave., Chicago, as a companion to the P. I. V.

The new V. R. D. Horizontal Type

A Section of V. R. D. Chain

gear variable speed transmission announced about five years ago for larger capacities. The V. R. D., capable of a horsepower output of ½-hp. at maximum speed, with a maximum ratio of speed variation of 10 to 1, continues such features as compact all-metal construction; total enclosure; self-lubrication in an oil bath; protection from moisture and grit; and the use of a chain for transmitting the power positively. The chain used for transmitting the power from input to output shaft is side-contact roller chain, consisting of steel links, made endless and connected by hardened steel pins in hardened steel joint bushings. Openings in each pitch of links provide a pocket for each of two hard steel rollers, and from both sides a portion of roller protrudes sufficiently to permit each pair of chain rollers, at each engagement of chain and wheels, to roll into contact with the hardened steel conical opposed discs forming the driver and driven wheels, until finally the chain is engaged positively in the wedge-shaped wheels at the proper pitch line for the speed desired on the output shaft. The disengagement of the chain also is a smooth, rolling action. A speed indicator permits ready check-up on operating speed settings. Spring pressure applied to the two discs of one wheel serves to maintain correct tension and compensate for natural chain wear automatically.

The V. R. D. is furnished with horizontal or vertical box; with or without reduction gearing; and can be supplied motorized, with motor forming an integral part of the unit.

* * *

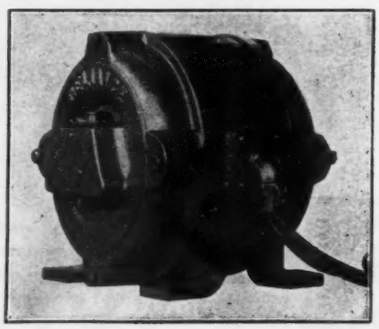
New Synthetic Oil

A new synthetic oil called "Turkelene" has been developed by Glyco Products Co., Inc., Bush Terminal, Brooklyn, N. Y., for uses similar to sulphonated or Turkey red oils. It is stated the product is neutral and contains no sulphur or combined mineral acid; is non drying and acts as a softener, penetrant and lubricant. It is offered for use for textile emulsions, dyeing assistants, detergents, etc.

* * *

New Reliance Loom Motor

The Reliance Electric and Engineering Co., 1042 Ivanhoe Road, Cleveland, Ohio, have announced a new loom motor designated as Type AA. The stator frames are rolled steel. Substantial steel feet are electrically welded to the frame. This construction, it is pointed out, provides a solid support to absorb shocks. In addition to slot-cell insulation, the windings are given a double treatment with an oxide compound of unusual heat resistance; this insulation is to provide the extra protection against head caused by overloads during the breaking-in period for the loom and when the loom is out of adjustment. The sleeve-type bearings are interchangeable for right or left-hand operation. Oil lubrication is supplied through wool yarn which fills a large capacity dust-tight reservoir. Rotors are the cast type, the bars and end rings being cast of aluminum as a single unit without joints. An even contour and smooth finish is used to provide easy cleaning and avoid the building up of lint, it is explained.



New loom motor

* * *

Bulletin on Ventilation and Control

"What about the Ventilation in your Buildings?" and "The Controls on your Steam, Air and Water Lines" are discussed in a small, colorful folder issued by The Swartwout Co., 18511 Euclid Ave., to give a birds-eye view of the products and facilities of this company.

* * *

Grade and Staple of Cotton Ginned from the Total Crop of 1933

The cotton crop of 1933 was about the same in grade and only slightly longer in staple on the average from the crop of 1932, according to the report released recently by the Bureau of Agricultural Economics.

The Bureau of the Census reported 12,659,953 bales ginned for the 1933 crop. All of this was American upland with the exception of 9,683 bales of American-Egyptian.

Early in the season it seemed that the grade of this year's crop was going to be lower than that of last year. Throughout this season, a smaller proportion of the higher grades of White cotton, Strict Middling or above, has been ginned than was ginned last year; but, on the other hand, there has been a larger proportion of Extra White cotton, most of which is of the higher grades. The proportion of spotted cotton is 31.0 per cent this year compared with 17.4 per cent in 1932. Practically all of this Spotted cotton was Middling or above in grade, however, so the average grade for the season will be as high as the average for last year.

The proportion of cotton shorter than ⅞ inch decreased from 6.5 per cent in 1932 to 4.2 per cent this year. Larger proportions are shown this year for all other lengths with the exception of ⅞ inch and 1 1/16 inches. There was a small decrease in the proportion of this length.

There is a slight increase, as compared with last year, in the proportion of tenderable cotton. This is largely accounted for by the small ginning of very short cotton this season.

Textile Announces

THE NEW

SUPER-SANFORIZER

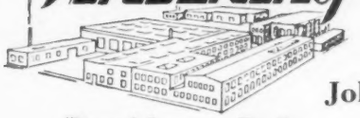
GIVING

GREATLY INCREASED PRODUCTION

To Mill Executives about to equip for Sanforizing or add to equipment already in operation we respectfully suggest that the advantages and merits of this New Machine be carefully investigated.

A request will bring Complete Information or one of our Sales-Engineers will call.

The Textile Finishing Machinery Co.



New York Office
50 Church St.

Southern Office
Johnston Bldg., Charlotte, N. C.

Providence, R. I.

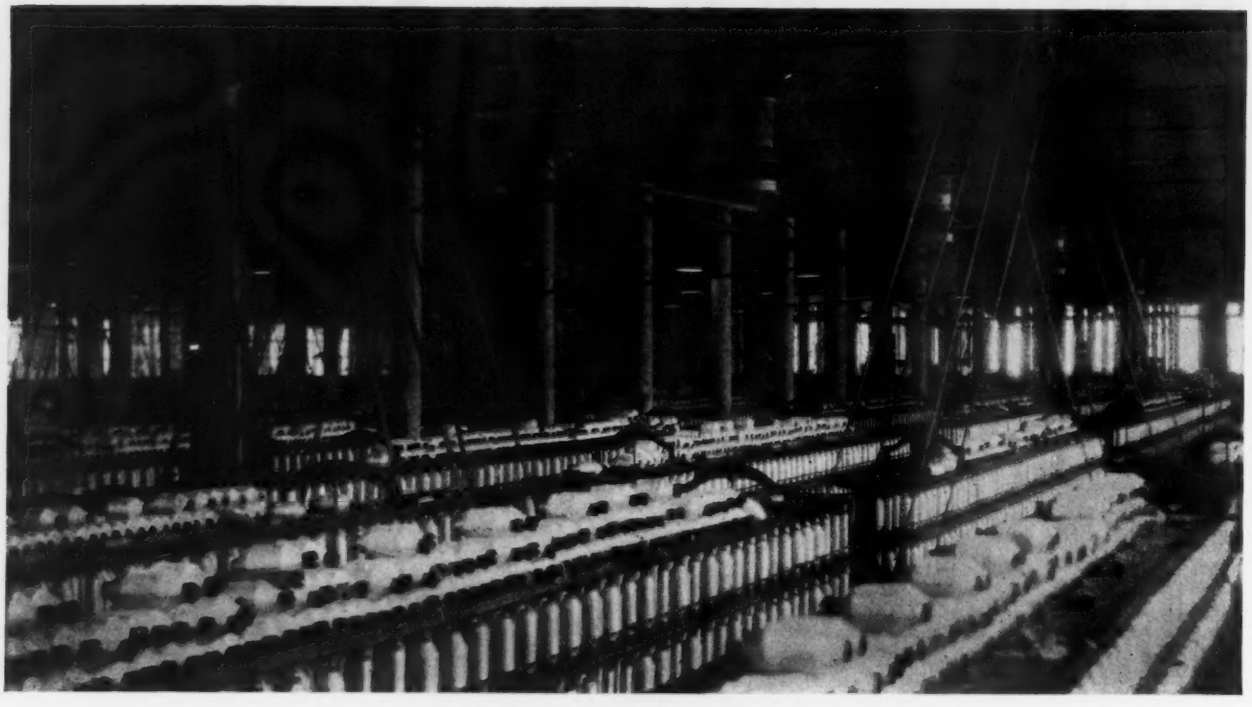
MANUFACTURERS OF MACHINERY AND EQUIPMENT FOR
BLEACHING, MERCERIZING, DYEING, DRYING, PRINTING, FINISHING,
AND SANFORIZING TEXTILE FABRICS

when HIGHFLEX JR.

..the jury ordered 10,000 feet

AT first the officials of Waypoyset Manufacturing Company at Pawtucket, R. I. simply couldn't believe the story of Highflex Jr. Why should they? Hadn't every rubber and fabric belt they had ever heard of given miserable service? All because these ordinary belts became extremely tight as they absorbed moisture, creating enough tension to ruin the most soundly constructed belts imaginable. No wonder Waypoyset stuck to leather.

Because of a special process of preconditioning belts, Goodrich insisted that with Highflex Jr. the old tradition about rubber and fabric belting could be knocked into a cocked hat. It was a challenge. Waypoyset accepted, bought four belts, and the trial



● *A view of the spinning room in the Waypoyset Manufacturing Company at Pawtucket, R. I.*

Goodrich

was put ON TRIAL

● *Waypoyset uses 100% Highflex Jr. in its spinning room.*

was on. Highflex Jr. performance was checked with that of leather belts, periodical inspections were made, and all findings carefully recorded.

Today Waypoyset use, not four of these belts, but 10,000 feet of them—on every one of their 124 spinning frames and everywhere else in their mills. At last they have found a rubber and fabric belt which, because it is properly conditioned, maintains tension and keeps its original tenacity and strength.

Destructive tensions are not built up in Highflex Jr. through moisture absorption, fasteners are not pulled out and edges do not fray. These mills are using almost two miles of Highflex Jr. Belting because it pays for itself within a year to 15 months through increased production.

Where all others have failed, Highflex Jr. is standing up. Goodrich engineers are anxious to pass along to companies such as the Waypoyset Mfg. Co. the secret of preconditioning belts for cotton and rayon mill service. Let us show you how Highflex Jr. will increase *your* operating efficiency.

The B. F. Goodrich Rubber Company, Mechanical Rubber Goods Division, Akron, Ohio.

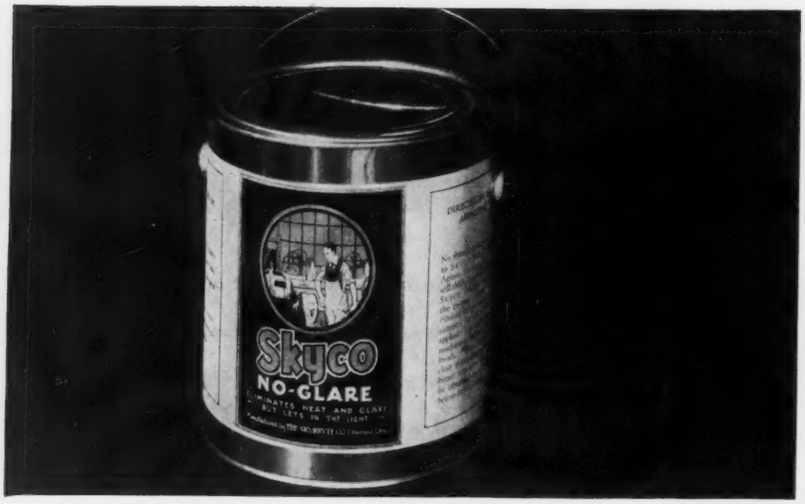
●

GOODRICH MECHANICAL RUBBER GOODS FOR THE TEXTILE INDUSTRY INCLUDE:

- *Transmission Belting*
- *Multiple-V Belts*
- *Conveyor Belting*
- *Air, Water, Suction, Steam and Fire Hose*
- *Roll Coverings*
- *Packing . . . and*
- *A Complete Line of Miscellaneous Rubber Items*

ALL *products problems* IN RUBBER

Highflex Jr. Belting



Buy Your Window Shades in Cans

at 1-2c Per Square Foot!

SOLVE the expensive problem of eliminating glare and heat from factory windows and skylights thru the use of SKYCO NO-GLARE, the sky-blue liquid which when painted over glass filters the fierce rays of the sun—shutting out *all* of the glare and a *lot* of the heat, yet it admits 94% of the light. The cost is only about ½c per square foot of glass covered.

For ten years No-Glare has served many of our largest industries, saving them hundreds of thousands of dollars in expensive window shades. No-Glare has never been successfully imitated. If you have tried substitutes and been disappointed — try the *genuine.* If it does not live up to our claims you may return it at our expense.

The action of No-Glare is simple. It filters out the infra-red sun rays—that part of sunlight which produces heat but not light —and allows 94% of the natural light to flow through with restful diffusion.

No-Glare is easy to apply either to the inside or outside of the glass and will stay on until removed with brush and warm water. Let this economical and effective product solve *your* problem. Use the coupon or write for a 1-gallon trial can on a money-back basis.

Try NO-GLARE at our Risk

Write or Use Coupon

The SKYBRYTE Co.,
1929 E. 19th St., Cleveland, Ohio.

Gentlemen:

Enclosed find trial order of 1-gallon of SKYCO NO-GLARE at $3.50. It is understood that if we are not satisfied we can ship it back collect and our money will be refunded.

Name of Company.....

Address .....

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . . .

Houghton Enlarges Southern Facilities

H. J. Waldron, southern sales manager of E. F. Houghton & Co., Philadelphia, manufacturers of oil and leather products, recently announced the opening of two new and larger offices in the South and an enlargement of the company's facilities for serving southern mills. The Charlotte, N. C.,

Mr. Waldron

offices have been moved to larger quarters at 1410 First National Bank Bldg. The following representatives are under the jurisdiction of this office: J. A. Brittain, Birmingham, Ala.; J. E. Davidson, Richmond, Va.; J. M. Keith, Greensboro, N. C.; R. J. Maxwell, Atlanta, Ga.; and D. O. Wylie, Charlotte, N. C. Mr. Waldron also announced the opening of a new office in New Orleans, La., at 1708 Masonic Temple, 333 St. Charles St. J. W. Byrnes and Byron E. Dodd will work out of the New Orleans office.

* * *

Hajoca Opens New Division

The Hajoca Corp., Philadelphia, Pa., inaugurated their Industrial and Mill Supply Division on April 6th at their offices and warehouse at Asheville, N. C. About 50 guests attended the opening. L. J. Melson has recently been made manager of the Charlotte, N. C., branch of the Hajoca Corp., and also of the Asheville branch, with headquarters at Charlotte. H. R. Fries has been made assistant manager of the Charlotte and Asheville branches, with headquarters at Asheville.

* * *

Hirsch Represents Royersford

Royersford Needle Works, Inc., Royersford, Pa., manufacturers of spring beard needles, sinkers, dividers, etc., for knitting machinery, have announced the appointment of Louis Hirsch Textile Machines, Inc., as their special representatives, effective April 23—as a further extension of Royersford's services to the full-fashioned hosiery industry, and as an addition to its existing sales organization.

Solvay Moves Phila. Office

Solvay Sales Corporation have announced the removal of the Philadelphia office of the corporation to 12 South 12th St., Philadelphia, Pa., effective May 1.

* * *

Fred Vilmar Takes Over Selling of Artloom Upholstery Lines

The Artloom Corporation, Philadelphia, have announced the appointment of Frederick T. Vilmar as sole sales agent for the lines of the Philadelphia Tapestry Mills and Philadelphia Pile Fabric Mills, divisions of the Artloom Corporation. Mr. Vilmar was formerly sales manager of the upholstery division, L. C. Chase Co., and had previously been with Collins and Aikman Corporation.

* * *

Chester Goodyear Represents Hubinger

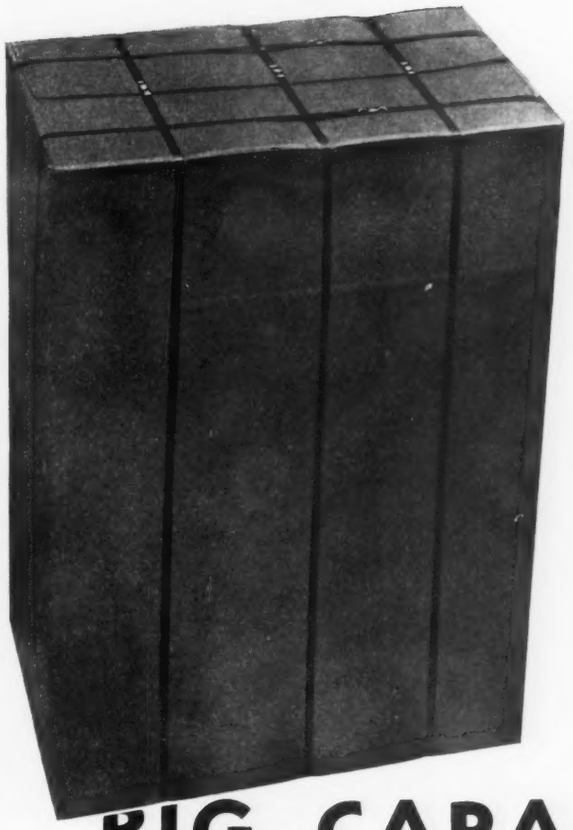
Chester M. Goodyear, well known to the textile manufacturers of the South, has been appointed southeastern representative of the Hubinger Company, Keokuk, Iowa, manufacturers of textile starches and corn syrups. Mr. Goodyear is making headquarters at 150 Ponce de Leon Ave., Decatur, Ga.

* * *

"Soapless Soaps"

"Soapless soaps" was the subject of an address delivered Thursday evening, April 12, in New York City by Samuel Lenher, of the Organic Chemicals Department of the du Pont Company, before the American Institute of the City of New York. These new soaps, which are said to show all the properties of common soaps and can be used under conditions where common soaps do not act, are being produced from raw materials by synthetic processes. They were discovered in Germany by the Deutsche Hydrierwerks and H. Th. Boehme Company; and are being manufactured in America by the du Pont Company. They are being sold by Proctor & Gamble Company, the National Aniline Company, and the du Pont Company under the trade name of "Gardinol".

As explained by Mr. Lenher, the new soaps are produced from natural fats or oils by reducing the fatty acids to the corresponding fatty alcohols. These alcohols are reacted with sulfuric acid, and the alcohol sulfate is neutralized with caustic soda to form the fat alcohol sulfate—which is the new soap. Two of the important points stressed in Mr. Lenher's talk were that the fat alcohol sulfates or new soaps form soluble salts in hard water so that the ring around the bath tub, and the graying and dulling of textile fabrics due to the gray soap curds in hard water are no longer problems.



NRA

BIG CAPACITY
HINDE & DAUCH
TEXTILE BOXES

There are as many types of Hinde & Dauch Corrugated Fibre Textile Boxes as there are types of textile products—small, lightweight items or heavy bulky products—both will find an engineered Hinde & Dauch box built especially for them. And don't forget that products weighing up to 500 lbs. can be shipped in H & D corrugated fibre boxes. « « Every Textile Manufacturer should have a copy of *"Corrugated Boxes and How to Use Them."* May we send you a copy? Address THE HINDE & DAUCH PAPER COMPANY, 454 Decatur Street, « Sandusky, Ohio

free!

HINDE & DAUCH *Engineered* TEXTILE BOXES

LIGHT WEIGHT » DURABLE » DUST-PROOF

H & D FACTORIES ARE AT YOUR SERVICE IN
BOSTON, RICHMOND, BALTIMORE, PHILADELPHIA, NEW YORK, BUFFALO, CLEVELAND, SANDUSKY, SAINT LOUIS & KANSAS CITY. IN CANADA, TORONTO & MONTREAL

PERSONAL NOTES
about Men You Know

WINDER GARY has become superintendent of The Lonsdale Company, Seneca, S. C., succeeding C. M. PADGETT, resigned. Mr. Gary was recently superintendent of the Edna Mills Co., Reidsville, N. C., where he has been succeeded by P. C. STOREY. He was previously general superintendent of the Hannah Pickett Mills, Rockingham, N. C., and previously had been superintendent of the Ware Shoals (S. C.) Mfg. Co., for many years.

THOMAS B. MOORE has resigned as superintendent of the spinning mill of the Dixie Mercerizing Company, Chattanooga, Tenn. CLIFFORD O. MORGAN, formerly with the Wetumpka plant of Alabama Mills, Inc., has become associated with the Dixie Mercerizing Company in the spinning mill. Mr. Morgan previously had been assistant superintendent of the Stonewall (Miss.) Cotton Mills before going to Wetumpka.

MURRAY FIELD has resigned as superintendent of the Lillian Knitting Mills Co., Albemarle, N. C., to become superintendent of the McLaurin Hosiery Mills, Asheboro, N. C.

W. A. HUNT has been promoted from overseer of carding to superintendent of the plants of the Santee Mills, Bamberg and Orangeburg, S. C. He had been overseer of carding at the Sibley Mfg. Co., Augusta, Ga., and the Bibb Mfg. Co., Macon, Ga.

ALLAN B. SIBLEY, a graduate in textiles at the Georgia School of Technology, Atlanta, in 1925, has been made superintendent of the Darlington Cotton Mills, Darlington, S. C.

FRANK S. DENNIS has been made general superintendent of the Granite Falls Mfg. Co., and Granite Cordage Co., Granite Falls, N. C. He had been superintendent of the Allred Twine Mills, one of the mills in this group. Mr. Dennis was graduated in textiles at the Georgia School of Technology in 1918.

G. B. DORN, who completed the textile chemistry and dyeing course at Clemson textile school in 1933, and who has been with the Pacific Mills, Lyman, S. C., and the Clearwater (S. C.) Mfg. Co., is now with Montgomery, Ward & Co., Baltimore, Md.

MARK W. MAYES, formerly manager of the Tifton Cotton Mills, Tifton, Ga., has joined the organization of Frank G. North, Inc., sizing and finishing compound manufacturers, of Atlanta and Marietta, Ga. Mr. Mayes has moved with his family to Marietta.

ALEXANDER F. W. COULSON, of Stockport, England, who is connected with the British Cotton Industry Research Association, is spending several months in the United States under a fellowship from London University, and is at present visiting southern mills. The object of his visit is to study the development of textile research in America and the method of cotton manufacture employed in this country as contrasted with the methods employed in England.

D. F. POOLE, SR., is now superintendent of the Alabama Mills, Inc., plant at Dadeville, Ala. He was for several years past overseer of weaving, slashing and designing at the Pepperell Mfg. Co., Opelika, Ala. D. F. POOLE, JR., has resigned as second hand in weaving at Opelika to accept a position as road foreman with Alabama Mills, Inc., installing machinery and doing general overhauling. W. A. CUNNINGHAM, formerly second hand in weaving at Opelika, is now overseer of weaving at the Dadeville plant of Alabama Mills, Inc. T. N. LETLOW is slasher foreman at Dadeville; he was formerly at Opelika. J. M. SPENCE, formerly overseer at the Hillside Cotton Mill, LaGrange, is now cloth room overseer at Dadeville.

FREDERICK H. BISHOP, one of the most popular and prominent figures in the American textile industry, retired as vice-president of the Universal Winding Company on March 28th, immediately preceding the celebration of his 85th birthday on March 29. Mr. Bishop had been with the company since its origin, and had filled every office. Up to the day of his retirement he had been continuously active in business. His thousands of friends and business acquaintances in this industry, to which he has contributed so much, join in expressing congratulations to him upon so extensive and useful a service in business, with the hope that his official retirement will not remove him entirely from personal contact with the members of the industry.

H. T. GILBERT, formerly with the Bibb Mfg. Company, Macon, Ga., has been made overseer of carding at the Pepperell Mfg. Co., Lindale, Ga. Mr. Gilbert was graduated from the Georgia School of Technology in 1926.

J. HAL ASBURY, formerly and instructor and a graduate of the textile department at Georgia School of Technology, Atlanta, has accepted a position with the Richmond Hosiery Mills, Rossville, Ga., as chemist and research engineer in the testing laboratory.

A. A. HARDEMAN, who has been with the Consolidated Textile Corporation at Lynchburg, Va., has been transferred to the company's plant at Hopedale, N. C., as assistant resident manager.

J. D. LUTES, of Eclipse Textile Devices, Inc., with headquarters in Charlotte, N. C., was recently made southern sales manager for the organization.

G. C. WYRICK, formerly manager of the Hickory Hosiery Mills, has resigned, and is succeeded by J. Y. DELL, formerly with the Superior Hosiery Mills, Lexington, N. C. Mr. Wyrick succeeded E. W. WALTON several months ago.

L. N. BENT has been elected vice-president of the Hercules Powder Company, Wilmington, Del. He was formerly general manager of the naval stores department, where he is succeeded by A. B. NIXON, formerly manager of the cellulose products department. M. G. MILLIKEN has been named to succeed Mr. Nixon. Mr. Milliken, formerly superintendent of the company's Union plant, is succeeded there by E. F. THOENGES, formerly assistant superintendent.

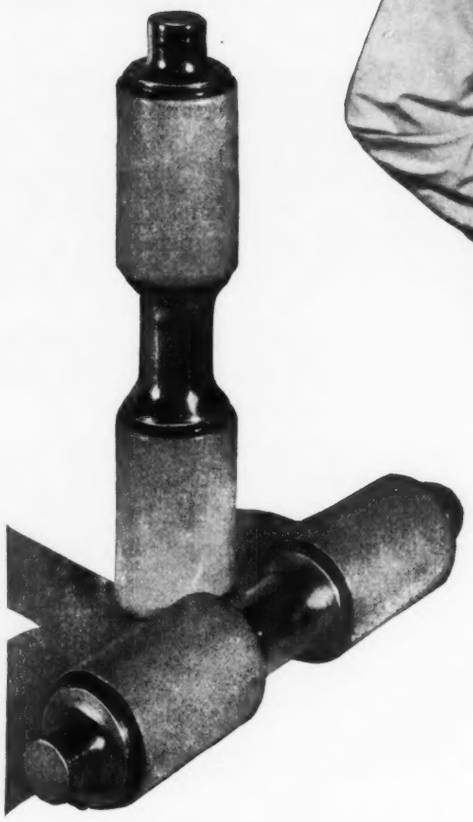
Obituary

A. FERGUSSON MACINTYRE, long known prominently and popularly in the textile industry, passed away at a Charlotte, N. C., hospital on Friday, March 23rd. He was superintendent of the Cornelius Cotton Mills, Cornelius, N. C., at the time of his death.

Mr. Macintyre, known intimately to his friends throughout the textile industry as "Sandie", was born in Glasgow, Scotland, and came to America and entered the textile industry at an early age. He worked in New England and Canada, and later was agent of the Fulton Bag & Cotton Mills, Atlanta; superintendent of the Fitzgerald (Ga.) Cotton Mills; agent of Appleton Mills, Anderson, S. C., and held other prominent positions. He is survived by MRS. MACINTYRE, and two sons, R. B. (BERT) MACINTYRE, of Charlotte, and DAVID MACINTYRE, of Franklinton.

Riegel

"FROM COTTON FIELD TO COUNTER"
via
SPINNA CALF



RIEGEL'S New
THIRD DIMENSION SHIRT
SANFORIZED SHRUNK

Men of America endorse this amazing improvement in men's shirts.

SPINNA CALF is doing its daily job in the production of fine yarns which make Riegel Fabric quality possible.

SAYS THE SUPERINTENDENT IN RIEGEL'S MILL:

"Regarding SPINNA CALF—we use it exclusively on our long draft spinning rolls and have done so for a long time.

"We consider SPINNA CALF a fine roller covering giving very satisfactory results."

A. C. LAWRENCE LEATHER CO.
Specialists in Textile Leathers
BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.

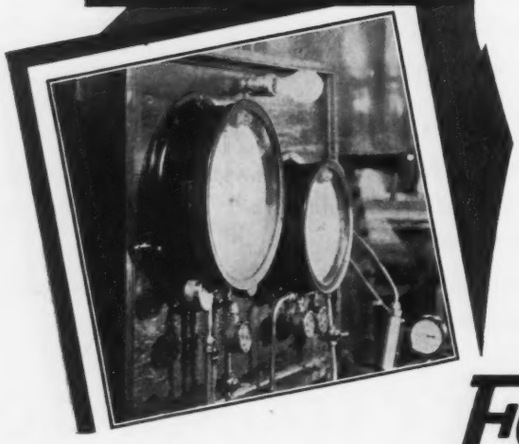
Because FOXBORO *has met the 4 all-important demands of*

1 *Automatic Control of Temperature on the Size Kettles*

2 *Automatic Control of Level in the Size Box*

3 *Automatic Control of Temperature in the Size Box*

4 *Automatic Control of large and small Drying Cylinders*



SLASHER CONTROL

—it is saving money in many mills

There is, surely, little need to reiterate to experienced Textile Mill Executives the value of automatic control in Slasher Operation.

Not only specific tests, but actual day by day practice in big mills have demonstrated that such control reduces warp breakage up to 50%, as well as increasing production and reducing the consumption of both starch and steam.

The Foxboro System is saving money and getting better results in outstanding mills because it is a system that *does not leave any weak link* in the slasher cycle.

The important thing to remember is that for best results *such control must be complete.* The Foxboro System controls all four essentials.

The careful engineering in the Foxboro System of Slasher Control is typical of the thoroughness of Foxboro Engineering in the application of Foxboro Instruments to every process of textile production. If you want to cut costs . . . why not get in touch with a Foxboro Engineer?

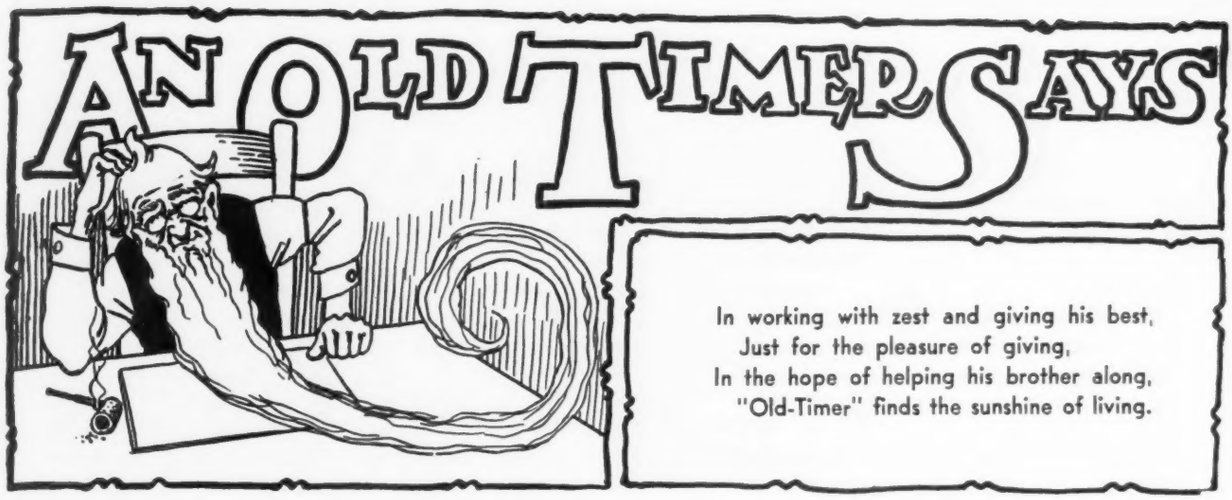
The FOXBORO COMPANY
FOXBORO, MASS., U. S. A.
Offices in Principal Cities

★

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

Complete textile instrumentation

The evidence is yours— if you want it **WRITE US** *for the facts* **TODAY**


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

How "Streamlined" Are You?

YOU can't say Old-Timer doesn't keep up-to-date. He saw the new model automobiles and immediately recognized the opportunity for driving home, effectively, a point about all of us. Don't miss this one. The series which this article interrupts will be resumed next month . . . . .

(Note: Since this article is written in conversational style it should be borne in mind that those paragraphs in regular type represent Old-Timer's part of the conversation, and those in *italics* are Jim's part.)

Hey, OLD-TIMER, *are you ready to go?*

Go where, JIM?

Don't you remember when we saw the announcement of the new automobiles which would be shown this week, we decided we would take in the show?

Oh, sure, sure, JIM. I'll be right out.

Later, at the show—

Look at that one over there, OLD-TIMER.

Yeah, it looks like a great big bug to me.

That's the new 1934 stream-lined model. Don't she look rakish? Looks like she would cut through the wind like a rocket.

The floor salesman talking:

This is the new XYZ stream-lined car. Please note that the body frame is practically one piece—no welded or riveted joints. And look at the arrangement for ventilation. You can smoke your pipe in this car and the smoke will be carried out with a gradual draft without any discomfort to the other passengers. You see, it is only necessary to barely crack this window—

No, that wouldn't suit me, Mister; especially if I had my friend JIM here along.

Why wouldn't it suit you? In fact, you are the first person who has said this ventilating system was not better by far than the old arrangement of having to run the windows down or open the windshield—

Sure, I guess it's all right, Mister, but I was just thinking JIM would have a hard time hitting such a little crack when he went to spit. He "chaws", you know, and only spits about every half hour, but when he does spit—

Goodbye, Mister, and thanks, but JIM has gone over to that other booth, so I guess I had better go along also . . . What you looking at now, JIM?

Come here and I'll show you a fine idea, OLD-TIMER. *See this car has no front axle like the old type. Each front wheel is independent—that is, if one front wheel hits a rock it will go right over it without tilting the body of the car sidewise. That's what they call knee-action. And, oh boy, look at those brakes. No danger of a fellow having an accident if he is anyways careful at all. Even when you run into an emergency—that is, a condition you didn't anticipate—probably by some careless driver not signaling you he was going to stop or turn out some road—shucks,* OLD-TIMER, *you can lock all four wheels with only a reasonable push with your foot.*

The salesman again:

And, gentlemen, please take a look at our new oiling system. You see, every bearing not only has an ample flow of oil passing over or through it in proportion to the speed of the motor; but the oil is cooled at the same time in much the same order that your radiator cools the water passing over the cylinders of your engine. The faster your motor runs the more lubrication it gets. And of course our system of gear shifting has also been improved. You no longer have to think about changing from second to high or even from high to second—in fact, you soon forget about having to get your engine to the correct speed; double clutching, etc. All of these things of course mean easier operation, less fatigue in making long trips, and—

Much obliged, Mister. Guess we had better be starting towards home. Come on, JIM, the whistle is going to blow in the morning at the same time.

On our way back—

Doggone, OLD-TIMER, *those new cars are sure a big improvement over our old rattle-trap, aren't they? I'm going to ask our dealer what he will allow me on my old car and if he will talk anyways fair I don't see how I can afford not to trade. In fact, I believe the dif-*

ARCY

THIS reliable starch liquefying amylase is used for all purposes of sizing and finishing where liquefaction of raw starches is required.

ARCY quickly and safely liquefies starch at low cost producing non-hygroscopic pastes of high adhesive value.

You can depend upon Arcy to give constantly uniform results.

DRAKE CORPORATION
NORFOLK, VA.

ference in the cost of operation will soon make up the difference in cost. And those brakes certainly took my eye. My old bus sounds like a pig squealing every time I try to stop the thing. I don't know so much about that knee-action business, but that streamline idea is sure the thing. Talk about progress, OLD-TIMER, *those automobile manufacturers have sure stepped out, haven't they? Say! Are you asleep,* OLD-TIMER? *You haven't said a word since we left town.*

I was just thinking, JIM.

Thinking of what? Don't you like the new cars? Don't you think they have made wonderful improvements in practically every phase of an automobile? Don't you believe it is only a matter of a year or two until all cars will be stream-lined like those new models we saw? Come on, now, and tell me what you are thinking?

Well, JIM, seeing all those improvements has put me to thinking sure enough. I was just wondering what you and I have done toward keeping up with this fast progressing age. How much are you stream-lined, JIM?

Me stream-lined? What in Heck are you driving at now? Here you go wanting to spoil our nice trip with some darn fool idea. Can't you be satisfied with talking about what we have seen tonight, and appreciating all the improvements we have seen in the manufacturing of automobiles? Why, OLD-TIMER, *I can remember the first car—*

I say, JIM, what have you done toward stream-lining yourself in the last year? Have you progressed in your work to where you can do much more work, better work, and with less effort than you did a year ago? If not, then the automobile manufacturers have put it all over you and me in progressing.

They have stream-lined the car so it can go through the wind or air with much less resistance.

Can you do your work with less resistance?

Can you get your men, your operatives, to carry out orders with less resistance than a year ago? Have you learned how to obtain more loyal co-operation than you were getting a year ago or three years ago?

Can you carry out the orders from your employer with less resistance than you formerly did? Can you slide through your work with less apparent effort, at the same time getting better results—higher production—less cost?

The stream-lined auto runs faster with the same amount of horsepower (that's more production) and produces that speed with less gasoline (that's lower cost).

I say, JIM, how stream-lined are you?

Well, for the love of Mike, OLD-TIMER. *You are always bringing up something unpleasant. Why in the name of Adam or something can't you be satisfied—*

That's just it, JIM. You are too easy to get satisfied on your job and the first thing you know you will be standing still and that means going backwards, because the progressive man is "stream-lining". He is keeping up with the times—he is improving his oiling system—he is installing "knee-action" to help him over the bumps easier—he is improving his brakes so he can stop quicker when he sees a mistake ahead. His oiling system may be likened to improvement in controlling his temper. Instead of getting mad at an operative and causing the operative to get mad, too, resulting in both saying and doing things that are not only unnecessary but do not get as good results as when talking the matter over in an intelligent way, so that the operative will be encouraged instead of discouraged and try his best to prevent a recurrence of the mistake. With such procedure you are also building up loyalty.

Improve your oiling system, JIM, so that the faster your engine (your work) goes the better distribution of oil you get.

And for goodness sake, keep your bad temper. No one else wants it, anyway, especially after they see the way you use it. Let me relate a little incident I recently witnessed to bring out my point about a bad temper:

It was a cold, rainy Sunday. A girl and her friend were discussing where they would go for something to eat. The girl suggested that they not go out in the bad weather, but fix up something to eat at home. She remarked it would be lots of fun and she would enjoy it immensely. She agreed: "You get the eggs and I will get the toast, and while you are frying the bacon, I will fix the coffee." "Oh, boy, doesn't it smell good. Better put in two more eggs, because I am starving. A person can eat more soft-boiled eggs than eggs fixed any other way, you know."

"Don't you think the eggs have been in long enough?"

No, not yet; I am watching the time."

She takes up the eggs. The first one opened is not exactly as hard as some rocks you have seen, but it surely was hard enough. The next one she opened was harder—if possible—and then she exploded. She said some very ugly things. She cried and made everything very disagreeable. She spoiled the whole day not only for herself, but for her innocent friend. In fact, while she was raving and raring and cussing, the friend went right ahead and enjoyed the meal. In fact, the friend really liked hard-boiled eggs anyway. Now, who got hurt by the terrible explosion of temper? No one but her, besides, she was afterwards embarrassed by her very unladylike actions.

Keep your bad temper, fellows. No one else wants it.

And I say, JIM, how stream-lined are you?

Southern Textile Association to Meet at Myrtle Beach, June 29-30

Announcement has been made that the annual meeting of the Southern Textile Association will be held at the Ocean Forest Hotel, Myrtle Beach, S. C., on Friday and Saturday, June 29 and 30. Those intending to attend should make their hotel reservations direct, it is suggested. The rates will be $5 per day, two persons in a room; $6 per day single rooms, including meals.

The meeting will open on Friday morning, with no session Friday afternoon, and the annual banquet on Friday evening. The business session will occur on Saturday morning. A splendid program and large attendance are expected. The association met at this place in 1930.

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

What Causes this Rippled or Puckered Looking Selvage?

Readers are invited to give their ideas and experiences on any phase of the problem presented here.

EDITOR COTTON:

We have a question we would like to have discussed in "HOW OTHER MEN MANAGE". On a three-harness drill weave, with 12s warp and 18s filling, we have a slackness in the cloth on each selvage that extends 3 or 4 inches and runs the entire length of the cut. The cloth seems slack at the selvage, giving a rippled or puckered appearance and will not lie flat when stretched on a table. If any of your readers have had similar experience and know what we can do to remedy this, we would appreciate any information they can give us.

CONTRIBUTOR NO. 6313.

Card Settings for Long Staple Cotton

EDITOR COTTON:

I notice the inquiry in January COTTON from "D. H. (N. C.)" who wanted to know the best feed plate setting, when running a 12-ounce lap, 120 card draft, 40-grain card sliver, with Strict Middling 1 3/32 and 1 5/32-inch cotton.

Before giving my opinion as to the setting of the feed plate to the licker-in, I would like to point out the following facts which I have learned during my 40 years of experience.

(1) Poor work from the cards cannot be improved in the subsequent processes.

(2) One rule that holds good for all classes of work is that the more rapidly the work can be gotten from the card consistent with the quality or grade of work required, the stronger will be the yarn.

There are more arguments about the setting of the feed plate among carders than concerning any other part of the card, and I will now try to thresh out this matter to the satisfaction of "D. H."

Some carders advocate setting the feed plate from a 12/1000 to touch. I am one that has always advocated setting the feed plate as close as possible, but under the following conditions:

(1) You must have the proper nose feed plate to suit the stock being run.

(2) The draft of the card must not be excessive.

(3) The licker-in must be in a perfect condition.

Now picture what takes place at this point. The sheet is first struck down by the licker-in teeth, and by the licker-in teeth playing through this newly opened cotton, a sheet of fibers hanging downward is formed. Next, the number of teeth that pass the nose of the feed plate while one inch of cotton is delivered is about 2,000,000, with a draft of 100.

So, at a glance "D. H." should deduce that a card draft of 120 is excessive, and why? For the reason that the longer the draft and the longer the hanging fringe is acted upon by the 2,000,000 teeth of the licker-in, of course the more combing you give the stock and the more you weaken the filament.

We hear much about certain settings that will not injure the fibers, but we must all admit that after the stock has passed through any card, we have waste, and why? Now, let us consider the structure of the cotton fiber, its hollow spiral or collapsed tubular form, with its delicate waxy walls, and its wonderful aptitude for drafting and twisting just as long as it retains these qualities. But, when you strip the filaments of their waxy walls, you have a weak filament, termed waste. Therefore, "D. H." should deduce from the above that the longer you expose the fibers to the action of the licker-in teeth, the weaker the yarn.

Again, from the above, "D. H." can see that the closer the settings the weaker the yarn. It is the law of compensation. You can have a very clean yarn but in obtaining this you must sacrifice strength to a degree. So take your choice.

However, with a draft of 120 (which I do not approve) I would set as follows:

Doffer from cylinder, 7/1000; flats from cylinder, 10/1000; licker-in from cylinder, 12/1000; feed plate from licker-in, 10/1000; licker-in knives from licker-in, lower, 17/1000, upper, 12/1000; cylinder screen from cylinder, 22/1000; back knife plate to cylinder, 17/1000. And, of course, front knife plate set according to the amount of stripping required from the flats. The closer the setting, the less the strips.

Another point about the feed plate is that its

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WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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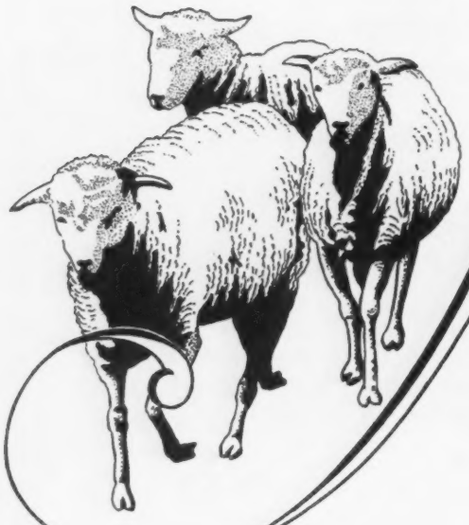

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good settings can be destroyed by the weights that produce the pressure of the feed roll on the sheet of lap.

WASH (R. I.)

Tests With Several "Home-Made" Long Draft Systems.

EDITOR COTTON:

Back in the February 1933 issue of COTTON, "CONTRIBUTOR No. 6193" requested some of us readers to give our experiences in the use of "home-made" long draft systems, and definite data in the way of breaking strength, ends down, etc. I have made some tests along these lines which I am submitting to you, hoping they will be of interest to your readers. The first set of eight tests are presented in Table I. These tests show that the ends down per hour per 1,000 spindles increases with increased front roll speed. The highest average breaking strength or factor is Test No. 2 and Test No. 6, with stands and cap bars "jammed up" and 2,200-grain cork middle roll.

Seven other tests of a similar nature are shown in Table II.

All tests show that using a 2,200-grain roll (that is, about this average) the breaking strength tests show the highest and also the highest factor. I have found that using this weight roll on from 1 1/16-inch to 1¼-inch staple I did not get any cockled yarn. During each test the same weight roving were run together on the same spindles on all tests.

The writer has had the same experience and has come to the same conclusion as reported in the following paragraph from "CONTRIBUTOR No. 6193": "A mill using full 1 1/32-inch cotton and longer should run a self-weighted middle top roll, preferably one light enough for the staple and weight of stock to allow 'jamming up' the stands and cap bars, thus getting from the equipment the maximum in fiber control. A mill on shorter than full 1 1/32-inch cotton will get best results, year in and year out, with the middle top roll weighted".

I have had experience in one mill using a self-weighted cast iron roll, no covering, which gave the following results:

Yarn No., 40s carded filling
Twist Mult. 4.75
Hank roving, 5.00 double
Staple, 1 1/16-inch
Hours test run, 17½
Spindle hours, 13,400
Front Roll R.P.M., 100
Front and back top roll, leather
Middle top roll weight, 3295 gr.
Average size, 40.32s
Average break, 41 pounds.

This arrangement gave good drafting conditions as long as the staple was uniform to 1 1/16-inch.

I would be glad to have other readers' tests as they have experimented on this subject.

CONTRIBUTOR No. 6317.

TABLE I

Test No.	1	2	3	4	5	6	7	8
Yarn No. (All combed)	40s	40s	40s	40s	40s	40s	40s	40s
Twist multiplier	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Hank roving	6	6	6	6	6	6	6	6
Single or double	Double	Double	Double	Double	Double	Double	Double	Double
Staple length	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛
Hours test run	38¾	38¾	40	40	40	40	38¾	38¾
Spindle hours	14,880	14,880	17,360	17,360	17,360	17,360	14,880	14,880
Front roll R.P.M.	102	99.5	99.5	102	87	92	92	87
Type of Rolls (Top) Front and Back	Cork	Cork	Cork	Leather	Cork	Cork	Cork	Leather
Type of Middle Top Roll	Washburn	Cork	Washburn	Leather No weight	Washburn	Cork	Washburn	Leather No weight
Weight in grains	2,215	2,200	1,535	----	2,215	2,200	1,535	----
End breaks per 1,000 sp. hours	20.16	23.05	21.16	19.27	10.94	12.11	19.08	14.52
Avg. Size Daily tests taken during test	39.23	39.75	38.47	38.99	38.51	38.99	39.51	39.57
Avg. Br. Strength daily tests taken	48.6	50.2	49.4	50.4	52	50.95	48.95	48.55
Avg. Factor of Sizing and breaking strength tests	1906	1995	1903	1965	2002	1987	1934	1921

TABLE II

Test No.	9	10	11	12	13	14	15
Yarn No. (All combed)	40s	40s	40s	40s	40s	40s	40s
Twist Multiplier	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Hank Roving	7.50	7.50	7.50	6.00	6.00	6.00	6.00
Single or double	Double	Double	Double	Double	Double	Double	Double
Staple	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛
Hours test run	33	33	33	29¼	29¼	29¼	36
Spindle hours	12,672	12,672	12,672	11,232	11,232	11,232	13,824
Front roll R.P.M.	102	102	102	87	92.5	99	87
Type of Rolls (Top) Front and Back	Leather	Cork	Cork	Leather	Cork	Cork	Leather
Type of Middle Top Roll	Leather No weight	Washburn	Washburn	Leather No weight	Washburn	Washburn	Leather No weight
Weight in Grs.	-----	1380	2212	-----	1380	2215	----
End breaks per 1,000 sp. hours	16.61	20.52	16.88	14.55	18.28	20.94	16.01
Avg. Size Daily Tests	39.65	38.85	39.28	38.07	38.12	38.58	38.49
Avg. Br. Strength daily tests	50	51.25	51.50	47.66	48	48.25	47.25
Avg. Factor of Sizing and Breaking Strength Tests	1982	1982	2022	1813	1828	1864	1814

A Layout to Make 30s Warp from SLM Cotton Break 60 Pounds.

"Contributor No. 6123" gives here details as requested following his article in February. Read this, and ask for further dope if you want it . . . .

EDITOR COTTON:

On page 105 of the February issue of COTTON, I offered to furnish, for any readers interested, a set-up that will make 30s warp yarn break 60 pounds, made from Strict Low Middling cotton and a 70-grain card sliver. I will give this information here, in response to the several requests from readers that you have forwarded to me. I have decided that if a fellow just keeps talking long enough he will start an argument. In addition to the requests you have sent me, I keep hearing through some of my friends who belong to the "Knights of the Road" fraternity remarks that have been made concerning my offer by executives and on down the line. Some of them have said 'twas impossible, others are skeptical, and none seems ready to receive my statement in full faith of fellowship.

Allow me to say this to the fellows who read COTTON: I am firmly convinced that there is no other medium affording us fellows such an opportunity of swapping ideas, and working together in solving our problems and increasing our ability, and becoming acquainted, as that we have in the "HOW OTHER MEN MANAGE" department.

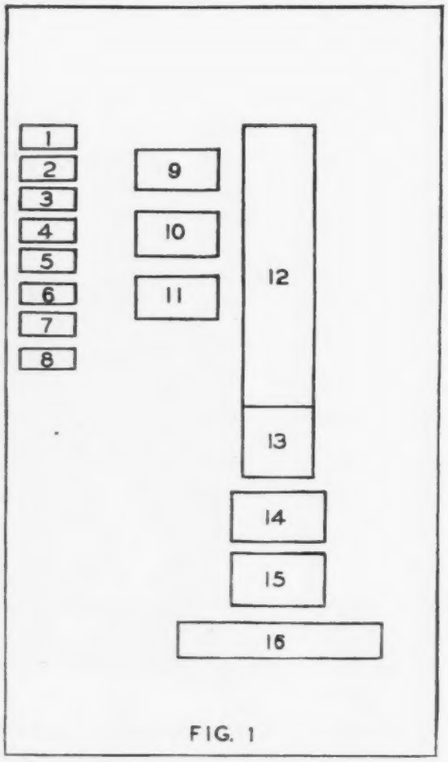

FIG. 1

What I shall say may not receivve the universal approval of all carders, but there is virtue in the recipe.

To begin with, I'll tell you why I know that it is possible to make 30s yarn breaking 60 pounds from a 70-grain card sliver. There is in South Carolina a certain print cloth mill making such yarn and has been making it, on that set-up, for two years. I am the man who put it on, and the superintendent told me today that it is very satisfactory. The set-up of course necessitates the use of some machinery that some mills do not have; however, such machines are not expensive.

The set-up which this particular mill has been using with the set-up in question is Strict Low Middling western cotton, and is of 1-inch to 1 1/32-inch staple.

The cotton is used direct from the bale, just as soon as the bale is opened; but this is done in a systematic way. Namely, the bales are put into the opening room and opened up by the yard crew, this crew taking out bagging, ties, etc. Incidentally, the man feeding the cotton handles from 40 to 50 bales daily, which to my mind is a lot of cotton for one man to handle, yet he has several minutes of each hour in which he can rest.

I am giving in Fig. 1 a sketch which I believe will be helpful in understanding the set-up we are discussing. In it, 1, 2, 3, 4, 5, 6, 7, and 8 are bales of cotton opened and ready for the machines; 9, 10, and 11 are blending hoppers; 12 is the feed table to the bale breaker; 13 is the bale breaker hopper; 14 is an upstroke cleaner; 15 is the vertical opener; and 16 is a horizontal type cleaner.

With this equipment, much has been done to eliminate the human element, yet there is one place where this element can be exerted to the destruction of the good that the machines might be able to do: namely, the blending of the stock, and unless the stock is carefully blended, the good accomplished will be nullified. The correct method is for the operative to take a slab of cotton from No. 1 bale and put it into the blending hopper, 9; then a slab from No. 2 bale, and so on, until the hopper, 9, is ¾ full. Next start filling the hopper, 10, beginning with the next bale where he left off, and repeat this procedure until all three hoppers are ¾ full.

Starting up the machines now, with these three hoppers feeding onto the feed table, 12 will give the equivalent of approximately a 15-bale mix, all being blended together by the action of the lifting apron in the bale breaker hopper, 13. The vertical opener, 14, the upstroke cleaner, 15, and the horizontal type cleaner, are all cleaning units and where they are properly speeded, and with the bars, screens, etc., adjusted, they will do all that anyone could reasonably expect of them.

You will notice that in this arrangement, the blending is done before the cotton reaches the cleaning units; however, it is blended again on the pickers, drawing and roving frames, as will be explained later.

We should not forget that these machines must be kept *cleaned* if we are to expect them to do their work properly.

Regardless of prejudice or criticism, I am very much in favor of one-process picking. A great number of these machines are on the market and are doing good work, but those with which I am most familiar are re-built equipment, and I am using them

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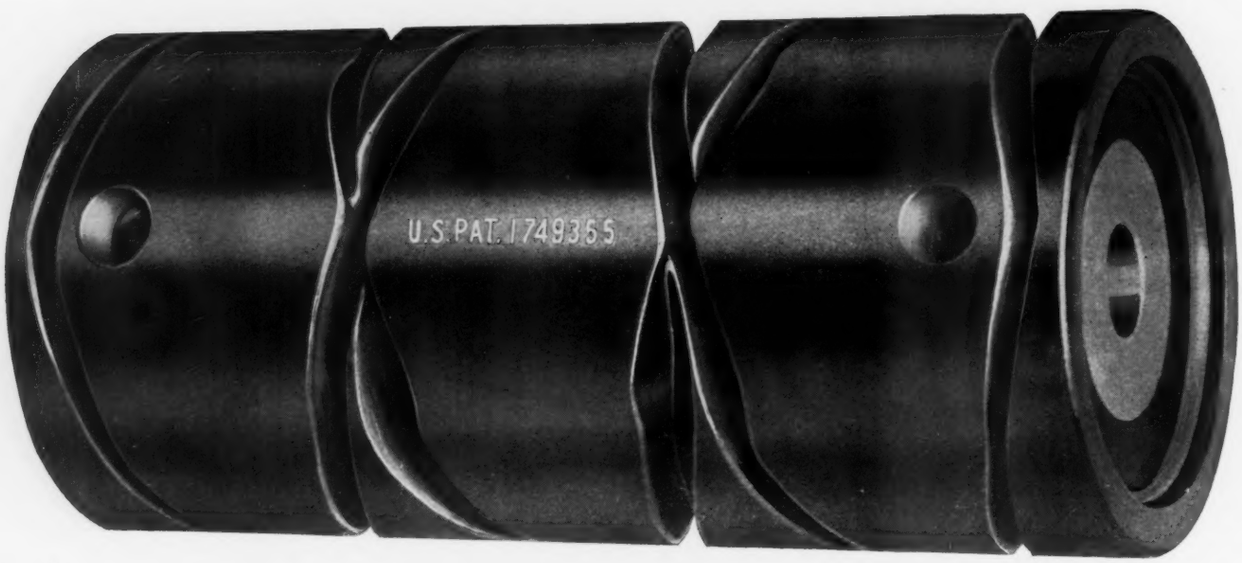

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in the accompanying illustration, Fig. 2. In this illustration, *A* is the conveyor pipe from the opener room; *B* is the conveyor pipe from the overflow hopper back to the condenser; 1 is the condenser; 2 is a rake head distributing conveyor to the hoppers; 3 is the feeding hopper to the picker; 4 is the breaker section of the picker; 5 is the intermediate section; and 6 is the finisher section; 7 is the overflow hopper; and 8 is a waste hopper for feeding reworkable waste back into

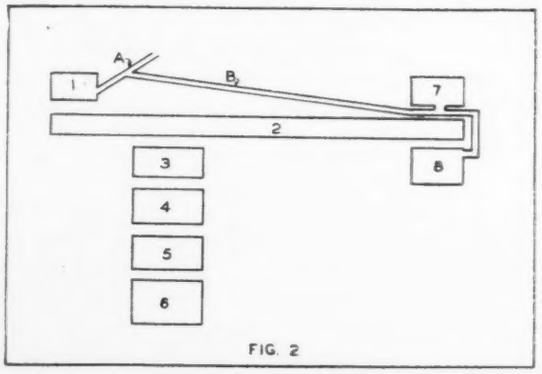


FIG. 2

the stock. The breaker section of the picker has a two-blade beater at 1,300 r.p.m.; the intermediate section a Kirschner beater at 1,000 r.p.m.; and the finisher section a two-blade beater at 1,200 r.p.m.

The picker has two eveners on the machine, and a controlling unit to the hopper, 3, and all of these units are connected by an evening arrangement that synchronizes the speeds between sections.

The route the cotton travels is through a pipe *A* into the condenser. The condenser delivers into the rake head conveyor distributor which in turn delivers to the feeder hopper of the picker unit. When this hopper is filled the surplus is moved on down to the next picker and so on until all hoppers are filled, then the excess cotton delivers into hopper, 7, the overflow hopper, which delivers back to the condenser. If the overflow hopper becomes filled before the pickers use more cotton there is an electrical switch on this hopper that is connected to a control switch timed to start the motor driving the blending hopper after they have stopped for a certain length of time.

All of this may seem to be too much system and detail, but let me remind you that system and detail are both good when properly administered. I'd be foolish to say this couldn't be done on another arrangement; I'm simply giving you the picture of an outfit on which it is working; you may be able to improve on it.

The settings in this opening and picking arrangement should be as follows:

Stripper rolls on opener room blending hoppers and bale breaker hopper should be set as close as possible to keep from damaging the machinery. The bars on the upstroke cleaner should be set to the fingers (or blades) of the beater, at top 1½-inch, at bottom ¾-inch; beater running 325 r.p.m. The bars on the vertical opener should be set open enough to permit droppings of foreign matter, but not enough to lose more white stock than is necessary, and should be set 1½-inch to the beater. This is accomplished by raising or lowering the beater. This beater should run at approximately 350 r.p.m. The horizontal cleaner that I have in mind has only one controlling factor, that of speed, and I suggest 400 r.p.m. The grid bar settings on the pickers should be ¾-inch top bar to beater and ½-inch bottom bar to beater, in all three sections. The beater to feed roll setting on the blade beaters should be from ¼-inch to ⅜-inch; and on the Kirschner, 1/16-inch to ⅛-inch.

A 52-yard lap should be run in 10 minutes, and the lap should weigh 15.86 ounces per yard.

On the cards, use these settings:

Flats	10/1000
(If conditions good, set flats to a 9/1000 gauge)	
Doffer to cylinder	7/1000
Doffer comb to doffer	22/1000
Licker-in to cylinder	7/1000
Feed plate to licker-in	10-12/1000
Top mote knife	12/1000
Bottom Mote knife	10/1000
Stripping plate (to cylinder)	17-22/1000
Back knife plate, bottom, 14-gauge sheet metal	
Back knife plate, top	12-22/1000

Run the doffer at 8 to 9.5 turns, dependent upon the production, and *make a 70-grain card sliver.*

Keep the cards sharp, grind often and light, strip before they need it.

On the first drawing, put up 6 ends on the back of the breaker, and draft into a 75-grain first drawing sliver, but do not try to do this without lever weighting the drawing rolls. If you don't know the system and would have me to furnish it, I'll be delighted to explain it fully.

On the second drawing, put up 6 of those 75-grain ends and draft into an 80-grain finished drawing, still using the lever weights.

Run the front rolls from 250 to 275 r.p.m. Set the first to second rolls ¼-inch over staple; the second to third rolls, ⅜-inch to ½-inch over staple; the third to fourth rolls, 9/16-inch to ¾-inch over staple.

Don't laugh—try it!

On the slubbers, put up the 80-grain finished drawing sliver and draft it into .50- to .52-hank roving. Run the front roll on a 11x5½ frame up to 220 r.p.m. if necessary. Set the first to second rolls ¼-inch over staple; set the second to third rolls ½-inch to ¾-inch over staple. That's all that is necessary here.

On the intermediates, put up two ends of the slubber roving and draft into 1.40-hank roving. Set the rolls the same as the slubbers, if they are of the same diameter, but keep the second and third rolls not over ⅝-inch apart.

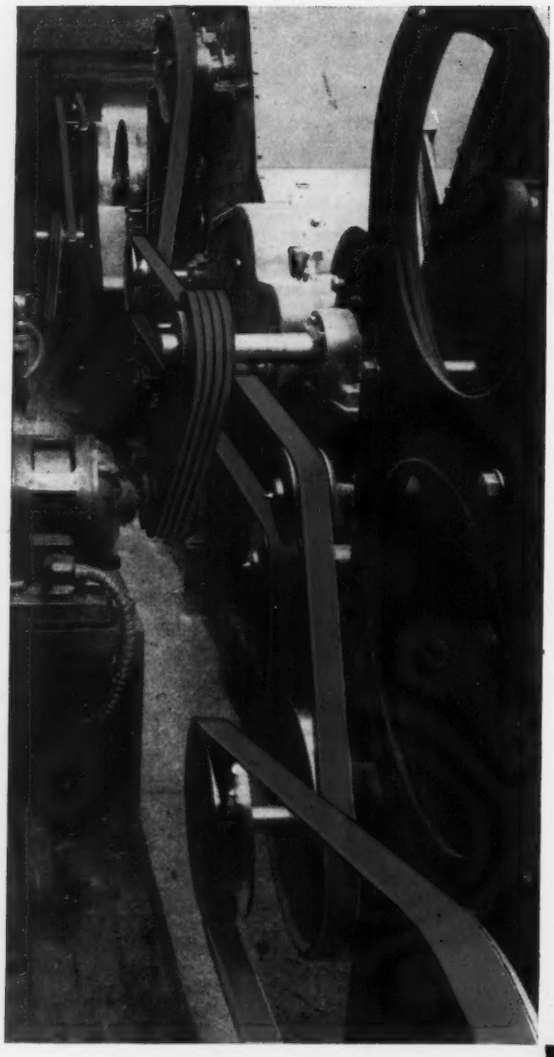
On the speeders, put up two ends of the 1.40-hank intermediate roving and draft into 4.00-hank fine speeder roving. Set the rolls on speeders from ¼-inch to 5/16-inch on first to second rolls; and ½-inch to 9/16-inch on second to third rolls.

Use standard twist on the slubbers and intermediates, but increase it to, say, 1.35 times the square root of the hank roving on the fine speeder or finished roving.

On the spinning, use double creel with 4.00-hank roving and draft into 30s yarn.

That's the secret, for this grade and staple of cotton. For other lengths I'd suggest increasing or decreasing the roll settings and card settings in proportion.

The yarn I am speaking of was made and is being



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Rubber Covered Rolls
Industrial Brake Blocks and Lining

THE MANHATTAN RUBBER MFG. DIVISION

OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES AND FACTORIES, PASSAIC, NEW JERSEY

made today on spinning frames built in 1895. The rolls are set as close as possible, first to second top roll; and 3/8-inch to 1/2-inch second to third top roll. The steel rolls were set 1/16-inch between flutes, on first to second; and 3/8-inch to 1/2-inch on second to third roll. The weight was taken off of the middle (second) roll, and applied equally between the front and back (first and third) rolls.

I am very glad to give this organization to the gentlemen who have requested it, and I am sure it will be found helpful if used carefully and tried sincerely. Someone may be able to improve on it by experimenting, but let me repeat, there is a large mill in South Carolina, built in 1895, that is using and has used this system for two years, getting the results I set forth in my previous article.

Now, let us hear from any of the fellows who want to make 30s yarn (yes, even 41s) from a 52-grain card sliver, using a 11 x 5½ slubber, making a 1.40-hank roving, with no intermediates, with an 8 x 4 speeder making 4.00- and 4.75-hank roving. This will not make as strong a yarn as the organization I have just given, but it makes a yarn that weaves well. Some of the fellows making sheetings and who do not have intermediates but wish to make finer counts might like to know how this is done—and it is being done, daily.

CONTRIBUTOR NO. 6123.

More Card Room Questions--By "Wash"

EDITOR COTTON:

Just to please "CONTRIBUTOR NO. 6211" and the boys of this department, here are some questions that can be added to my list that appeared in the September 1933 issue of COTTON.

The first question is for the beginner:

(1) The size of the rack gear on the English builder works opposite to that of the American builder. Now, what slogan will help the beginner to remember this?

(2) Let us assume that on Monday morning we have a fly frame equipped with the English builder, running over and under. Again, let us assume that the boss spinner is howling for roving. What would you do in such a case?

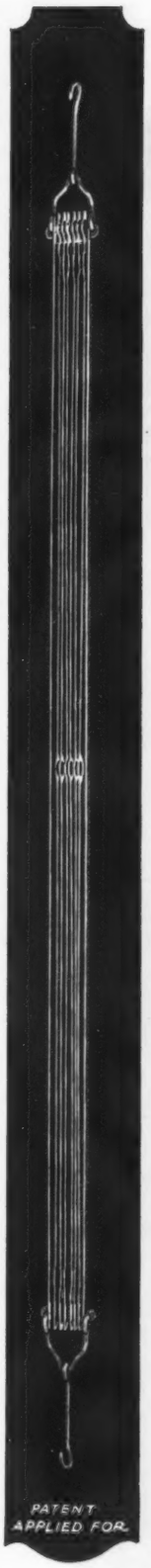
(3) Under the same conditions as question (2) suppose the latches and rocker are worn and the twin gears have not space enough to function properly. What would you do?

(4) Why is the English builder more dependable than the American builder? Watch for the answers. Remember there will be 40 years of experience back of them.

It may or may not be interesting to "A. T. G." and "CONTRIBUTOR NO. 6123" to know that "WASH" is a textile school graduate and also a correspondence school graduate in the following subjects: Calculations, cotton yarn preparation, cotton warp preparation, weaving, designing, cloth room machinery, mill engineering, and steam engineering.

Mr. Editor, page "CONTRIBUTOR NO. 6123" to read this article. What a man!

WASH (R. I.)



A Clean Selvage is the Hall Mark of a Perfect Fabric-

One more labor and money saving device.

A scientifically designed harness operated in unison with, but independently of, the regular loom harness. The eye coupling of the single rod hook attachment assures a perfectly flexible movement to the harness. It is, therefore, always in perfect alignment.

The length is governed by the fabric and the loom condition.

The special constructed shoulder on the heddle bar or rod assures the outside end guides always being in proper position and not interferring with the spacing of the other heddles.

Quickly attached or detached.

Positive in action - light in weight.

Equipped with special flat steel heddles.

The modern way to weave a perfect selvage.

Have a complete Steel Heddle Harness equipment.

Shipped complete ready for attaching.

Would you care to examine one?

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Rhode Island

Wednesday
Seventh
March
1934

Mr. O. A. Belger
The Belger Company
36 Pleasant Street
Watertown, Mass.

Dear Mr. Belger:

I am pleased to be able to say that your Roving Tester and Roll Spacing Determinator have more than lived up to our expectations, and we consider them both a decided asset to our Cotton Division.

Yours very truly,

G. Verney.

GV:TP VICE PRES. & GENERAL MGR.

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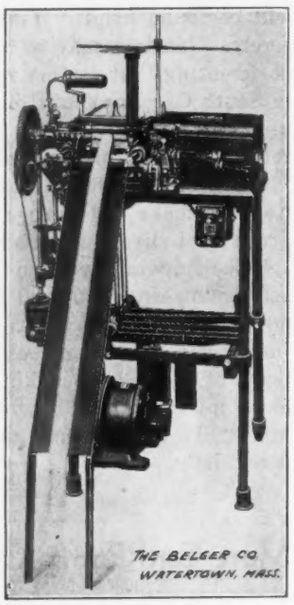
What Users Say About

The Belger Roving Tester and Roll Spacing Determinator

Textile mills representing over *ten million spindles* enthusiastically endorse the *Automatic Roving Tester* which assures proper adjustment of roving frames for tension, twist and lay.

Roll Spacing Determinator (distanceur), shown at right, is the "lab" for cotton mills, eliminating problems of roll setting and shows in a few minutes the exact roll spacings for all drafting rollers, WHICH formerly took hours of valuable time experimenting on production machines, running tests and disrupting the mill operation.

Ask for full information today about these two dividend-paying machines.



THE BELGER CO.
Watertown, Mass:

Ask us also about:
Martin Cones,
Sliver Tester by Twist Method, and
Long Draft Systems for Roving and Spinning Frames

"K. C." Gets In on the "Wash"-"A. T. G." Discussion.

EDITOR COTTON:

I have been very much interested in reading the discussion between "WASH" and "A. T. G." with reference to card room subjects, but, oh, how they do swat each other!

Most carders disagree in their methods, as do doctors in ministering to certain cases. I have had 25 years experience as overseer of carding and many years as second hand and fixer, and I still think that I am far from knowing it all, in fact, one is always running up against something with which he has not had to contend before. I believe carders can cuss and discuss carding problems without getting too personal. Many times both are wrong in an argument. I have in mind a friend who after an argument lasting for a good part of an evening said to me, "I am right but you will not give in to me." I think a textile school graduate is all right as far as figures are concerned, but I do not think he is capable of taking charge of a card room until he has had practical experience. If he does he will bump into many things that he did not learn in the textile school, especially in a large card room, full of old machinery of different laps.

In regard to the particular trouble mentioned, that of a breaker picker making a cone-shaped lap or a lap larger on one end than the other, I think that "WASH" is probably right, that the trouble is in the back of the machine. The feed may be heavier on one side than on the other. I have had the same trouble and find that it is sometimes caused by the calender rolls not being evenly weighted on both sides of the picker, that is, the weights not being the same distance from the ends of the weight levers. If the pressure is greater on one end of the calender rolls than it is on the other, the cotton will be condensed more on that end and the lap will be smaller on that end. Care should be taken to see that the racks rest alike on the lap roller with the racks down, and no cotton under the lap roller; also that the rolls in the rack head are turning free.

I agree with "WASH" with reference to "A. T. G's" idea that enough cotton escapes around the leathers which is around the screens to make a small lap on one end. That is all wrong, and as "WASH" says, "A. T. G." must have a very large dust pit to hold all of this "escaped" cotton.

"WASH" claims that on the drawing, when the sliver sags too much between the calender roll and front roll, that one tooth changed in the gear which regulates the tension is too much. I don't think so. When this changed gear has 60 teeth or more, as some drawing has, it makes a difference if this gear has 60 teeth or half that number of teeth. I have changed this gear one tooth when the drawing slivers run too slack, and notice no drop in the breaking strength of the spun yarn. "WASH" claims this trouble can be overcome by closing the rolls a little. What if the rolls on the drawing are as close as they will run already?

Some years ago our company bought some Texas cotton. It was of a good color and ran well until it

reached the first and second intermediates, and then trouble commenced. There was a little black comet-shaped speck that would wedge in between the flutes on the steel rolls and cause the rolls to lap up. Under the microscope it showed a small black speck with a comet-like tail attached, which caught in the flutes of the steel roll and caused them to lap badly.

Asks Two Questions

In all my years in the card room I have never seen anything like it before or since. I was some surprised. In fact, I was as surprised as the old fellow who went out to his stable one morning and found his horse dead in the stall and exclaimed, "Gosh, I never knew him to do that before."

I would like to have "WASH" and other readers of COTTON tell me what they think was in this Texas cotton that caused this trouble.

Here is another question: Some years ago I was employed in a mill where they installed metallic drawing rolls in the place of leather rolls, and on nearly every drawing head there would be one or two slivers running too slack, while the other slivers on the same head would have sufficient tension. It was nearly always the sliver next to the head end of the drawing, or the first one. Now what was the cause?

K. C. (CONN.)

Finds the Sliver Goes Heavy When Card Speed is Decreased.

Carders are urged to discuss the point this fellow brings up here; spinners to answer his question in the last paragraph . . . . . .

EDITOR COTTON:

No doubt every mill man in his studies of mill problems has come across certain things that were new to him and that he has assumed were common knowledge. Frankly speaking, I have come across a great many things that I was not familiar with, and on inquiry, reading and study, have found most of them to be commonly known. However, there is one condition we have found that I have not read of or heard discussed along with some of the more popular bones of contention gnawed over in the columns of COTTON. This condition was realized by us several years ago during our efforts to find and eliminate everything that would tend to cause uneven filling in a certain type of cloth where uneven filling showed up like a patch over a blind eye.

At that time the doffers on the cards were running 15 r.p.m., naturally a slow motion attachment was necessary so that the web could be pieced up in case of stripping or breaking down. It came to our notice that the card hands, in trying to make all their laps and cans run out together, would put the doffer on slow speed—if no one was looking. On investigating this practice we noticed that as soon as the doffer was slowed down the web would be noticeably heavier in appearance; and on weighing some of the sliver we found the weight per yard to go as high as 90 grains instead of 60 grains that we were supposed to make. Needless to say, this prac-

Add Costs of—

Wasted Lubricant + Slowed-up Production + Oil Spot "Seconds" + First Cost of Lubricant

=*Cost of "Cheap" Lubricants*

Finding the true cost of a "cheap" lubricant is really a simple matter. 7 out of 10 of the larger mills have found by their own tests that "cheap" oils are *not economical.*

That's why these big mills are steady users of NON-FLUID OIL. They have found that it produces real economies—*saving many times its own first cost.*

Because NON-FLUID OIL does not drip, leak or spatter, it outlasts liquid oil 3 to 5 times, saving money on lubricant costs and labor of application. By staying in bearings it helps prevent oil spots, thus doing away with loss from "seconds."

Write today for ***free*** *testing sample and bulletin, "Lubrication of Textile Machinery."*

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MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

RHOADS TANNATE LEATHER BELTS

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It is the performance of Tannate Flat Belting that makes it rate so high in strength and pliability, resiliency and durability, and in unusual power transmitting capacity.

A Woolen Mill Superintendent said of his Tannate Belts, "In all my experience I haven't found anything that gives better service."

The Secretary of a chain of Southern cotton mills said that the cost clerk had reported that Tannate had cut in half their belt costs on bicycle spinning.

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FACTORY, WILMINGTON, DEL.

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A MODERN GROUP DRIVE

is a well planned arrangement of groups of machines to give maximum production, convenience and etficiency with minimum investment and operation charges

Mr. Hanson of Mechanical Power Engineering Associates has made a number of Case Studies of Textile Mills, which show, without exception, that Modern Group Drive Equipment, compared with individual motor equipment is lower in installation cost, in operating cost, and in maintenance cost.

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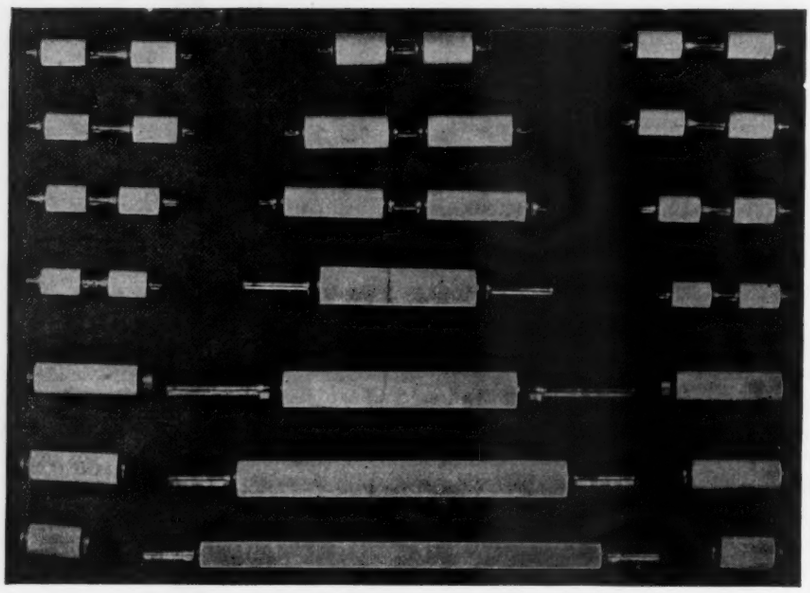
PROVEN IN SERVICE

DETAILS THAT COUNT

Because Philadelphia Felts are made from the finest of raw materials . . . because they are manufactured under the best of conditions, as to experience, men and machinery . . . because they are rigidly inspected—you are assured of getting the utmost in felt cloths when you specify Philadelphia.

Philadelphia specializes in Stamping Blankets, Palmer Blankets for Sanforizing and Lapping Cloth for Printing.

Our Southern Sales Manager, Clarence B. Seal, will gladly assist you on felt cloth problems. Address inquiries to Philadelphia.



PHILADELPHIA FELT COMPANY
FRANKFORD, PHILADELPHIA, PA.

tice was stopped by taking the slow motion attachment off of the cards, and the doffer speed reduced. During this process of change we wondered why this should be, and if slowing down the cylinder and the doffer at the same time would produce the same result. So we shifted the belt on a card to the idler pulley and noticed that as it slowed down the web seemed to be heavier, and on weighing it found the weight to have increased about 30 per cent.

At that time there was only one make of card in the mill, and we were wondering if this condition was to be had only on this particular make of card; afterwards two other different makes of cards were put in and we got the same results on all of them.

This knowledge came to us several years ago, and being more or less ashamed of not having seen it sooner, we kept it more or less to ourselves until recently, when we were discussing with a carder the causes of variations, and this cause was mentioned to him. His reply was that it couldn't be possible as the ratio of surface speed between the cylinder and doffer would be the same no matter whether the speed was increasing or decreasing. The usual bet of a cigar was made, and he shifted the driving belt on a card to the loose pulley. On weighing the sliver yard by yard we found the weight to be all right until the place where the speed began to decrease; there the weight was heavier yard by yard, and, at the point where the card was at full stop his 55-grain sliver weighed 70 grains.

We don't know whether every card will produce a like result or whether any card will give such a result if the licker-in and doffer belts are tight, nor do we know what part the speed of the comb plays in this, but we do know that the proper way to stop a card is to stop the doffer when the main driving belt is shifted to the loose pulley, no matter whether stripping time or stopping time. Right here, we venture to say that the carders who strip every other card and allow the card that has been stripped to run several revolutions of the doffer, making waste to avoid the light place after stripping, will find he is getting as big a variation on the heavy side just before stripping if he allows the card hands to stop the card without first cutting out the feed.

Of course, extreme variations in card sliver do not necessarily mean the same variation in the yarn; as an example, we use the case of the 90-grain sliver that should be 60-grain:

One end of 90-grain sliver on 1st drawing_ 90
Five ends of 60-grain sliver on 1st drawing 300

390 grains

390 grains ÷ draft of 6 = 65-grain average del. by 1st drawing.

One end of 65-grain sliver on 2nd drawing_ 65
5 ends of 60-grain sliver on 2nd drawing__300

365 grains

365 grains ÷ draft of 60 = 60.8 grains average del. by 2nd drawing.

60.8 ÷ 60-grain standard = 1.6 per cent variation on the heavy side which is further reduced by later doublings.

MANAGEMENT PROFITS•

It is principally through keen *management*—more efficient methods, the elimination of waste—that larger profits . . . *management profits* . . . can be earned. The Bobbin Stripping Department offers such an opportunity in the average mill.

One mill saved $13,000 by installing Type K machines . . . another earned the equivalent of 300% on a relatively small investment. And this was before Terrell engineers perfected the 8 important improvements which give the new Type K models even greater efficiency . . . even greater opportunity for astounding savings . . . which mean worthwhile *management profits!*

Write for Bulletins about

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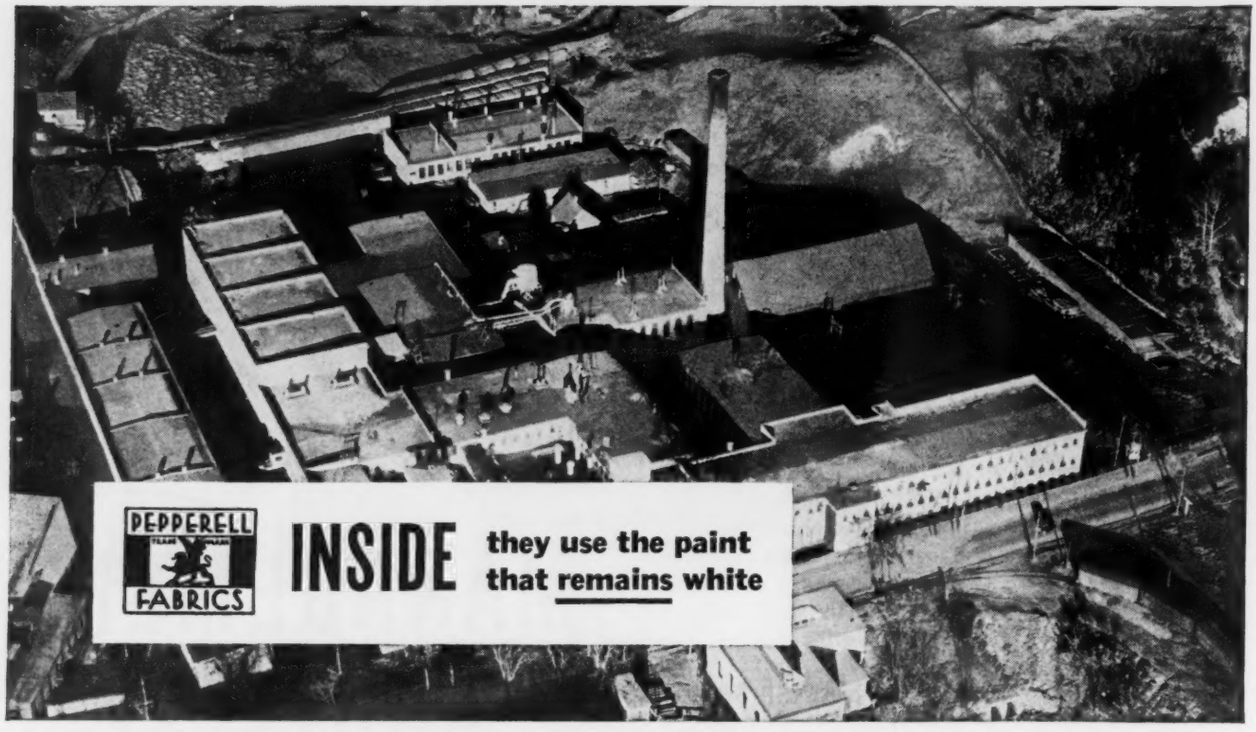
THE TERRELL MACHINE CO., INC.
CHARLOTTE, NORTH CAROLINA

MR. LUTHER PILLING, Danielson, Connecticut, *Representative for N. Y., N. J., Pa., New England States, and Canada*

GEO. THOMAS & CO., LTD., Manchester, England, *European Agents*

PEPPERELL chooses Interior and



AIR VIEW PEPPERELL, LEWISTON, ME., BLEACHERY. ENTIRE LEWISTON PLANT PAINTED WITH INTERIOR BARRELED SUNLIGHT

THEY first tried it in 1898—in the plant of the Lindale (Ga.) Division of the Pepperell Mfg. Co. Since then, Pepperell have used thousands of gallons of Barreled Sunlight not only in the Lindale mill but also in their four other plants.*

Although, in all this time, Pepperell have experimented with other paints, they have failed to find any other product giving the all-round lasting satisfaction and economy of Barreled Sunlight.

It is significant that recently Pepperell repainted their Lindale mills throughout with Interior Barreled Sunlight . . . their Lindale mill village complete with Outside Barreled Sunlight.

Interior Barreled Sunlight Remains White Longest

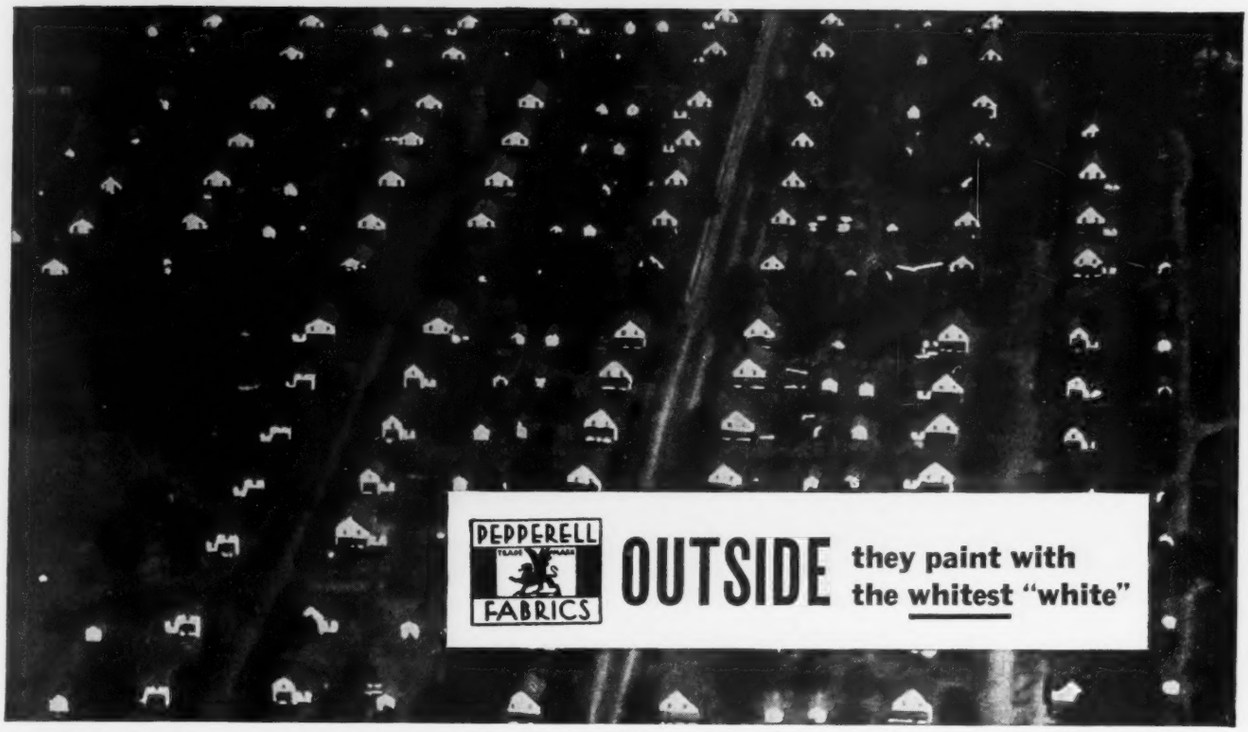
Made by the exclusive "Rice Process," Interior Barreled Sunlight resists "yellowing" . . . eliminates the frequent repainting which is the *only* remedy for yellowed white paint. It remains white upon ceilings and walls . . . continues to reflect a soft, agreeable working light . . . year after year. See explanation and Surety on next page.

Smooth, dirt-resistant, washable as tile, Interior Barreled Sunlight helps reduce Pepperell's maintenance costs. Soap and water do the job of paint upkeep quickly, easily. Repeated washings have practically no effect upon the glossy surface of Interior Barreled Sunlight.

Outside Barreled Sunlight The *Whitest White*

Outstandingly handsome, with a rich

Outside BARRELED SUNLIGHT



SECTION OF LINDALE (GA.) DIVISION OF PEPPERELL MFG. CO. MILL VILLAGE. ENTIRE VILLAGE PAINTED WITH OUTSIDE BARRELED SUNLIGHT

"depth" of finish all its own, Outside Barreled Sunlight has long been known as the whitest of all outside whites.

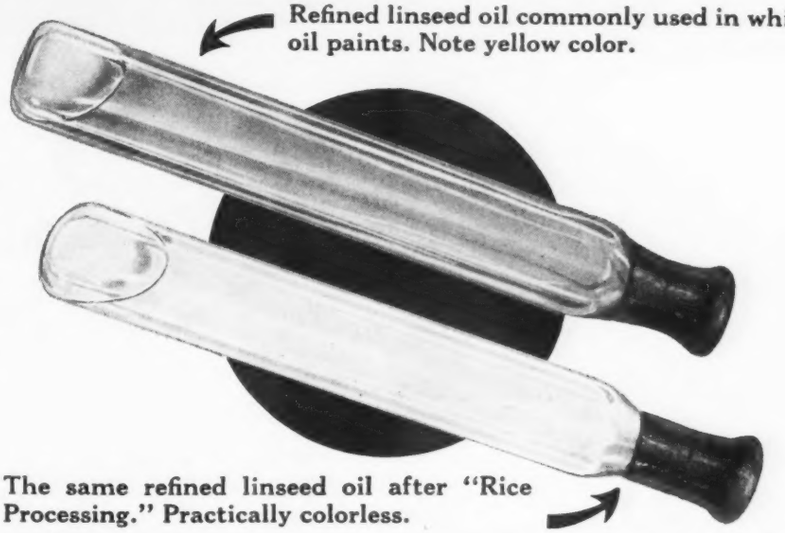
But that is only part of the story . . . Whether used in its pure white form, or tinted with a variety of practical colors, Outside Barreled Sunlight gives complete protection against weathering for a *longer* period of time.

First costs are low. Outside Barreled Sunlight saves paint, time and labor. It spreads further, covers better . . . one coat equals two of ordinary paints. With less paint to be applied, time and labor costs (which account for ⅔ of the cost of any paint job) are materially reduced.

Extremely durable, Outside Barreled Sunlight wears away slowly and evenly . . . hence less scraping and sandpapering at repainting time.

Write for complete information and list of other noted textile users of Barreled Sunlight. Address U. S. Gutta Percha Paint Company, 8-E Dudley Street, Providence, R. I. Branches or distributors in all principal cities. (For Pacific Coast, W. P. Fuller & Co.)

**Pepperell plants at Fall River, Mass., Biddeford and Lewiston, Maine, and Opelika, Ala., also painted with Interior Barreled Sunlight. Mill Village at Opelika also painted with Outside Barreled Sunlight.*



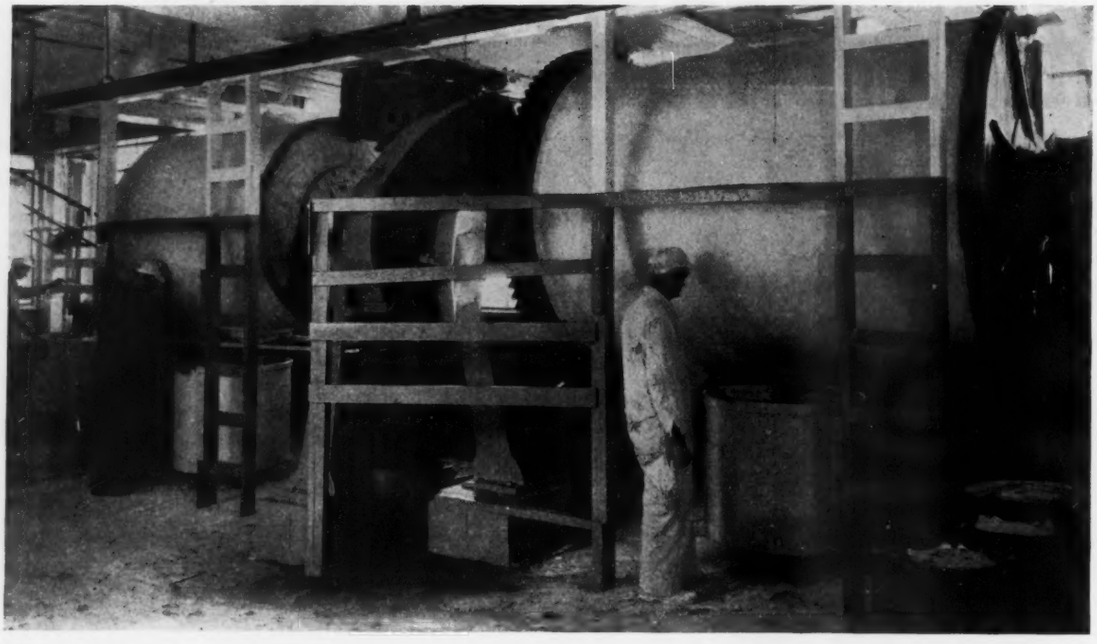
Refined linseed oil commonly used in white oil paints. Note yellow color.

The same refined linseed oil after "Rice Processing." Practically colorless.

UPPER VIAL shows refined linseed oil commonly used in white paints. The yellow color disappears when this oil is mixed with white pigments. But don't be fooled, it is still there . . . sooner or later to appear upon your ceilings and walls.

SAME OIL treated by the "Rice Process" appears as shown in the lower vial. The "yellow" has been *taken out*, not just bleached to temporary whiteness. The "Rice Process" also gives Barreled Sunlight remarkable hiding power, ease of flow.

YOUR SURETY—**We maintain that Interior Barreled Sunlight, the "Rice Process" White, will remain white longer than any oil-gloss paint or enamel, domestic or foreign, applied under the same normal service conditions and according to our specifications. If it does not do so, we will give, free, enough Barreled Sunlight to repaint the job.**



THESE modern mills of 10 and 15 barrels capacity grind very fine Mill White and Village Paints at low cost. 'Tis unbecoming to brag, but leading engineers and textile mills O. K. our products. Our values are worthy of a trial. Let us quote you.

GILMAN PAINT & VARNISH CO., CHATTANOOGA, TENN.

PAINT and VARNISH MAKERS

This Simple Idea

SAVES

Your Transmission
DOLLARS

If you use V-belts make this interesting test: Pick up a V-belt having the ordinary straight side and *bend* the belt. Three things will happen, right before your eyes.

(1) The top of the belt is under tension and grows *narrower.* (2) The bottom is under compression and becomes *wider.* (3) The sides of the belt *bulge out.* (Figure 1, at left.)

This bulging of the straight sided V-belt in its sheave-groove costs you money in *two* ways—(1) There is uneven wear at the bulge—*shorter life!* (2) The bulging side cannot evenly grip the sheave-wall—a *loss in transmission* efficiency!

In figure 2, you see how the precisely engineered *concave* side (a Gates Patent) exactly corrects this bulging. Two distinct *savings* result. (1) The Gates Vulco Rope wears evenly—*longer life!* (2) The entire side-wall grips the pulley—no-slip—*full delivery of power.*

WRITE *the* GATES RUBBER CO., *Denver, Colorado, for Valuable* NEW *Book on Transmission* – FREE!

Engineering service and stocks available in all large industrial centers

GATES VULCO ROPE DRIVES

It would appear from this elementary example that the variation in the laps and card sliver is of no consequence if there are enough doublings before the yarn is made. No doubt but that some mills are operating on this line of reasoning, but the yarn is only as strong as the variations in it and if they will carefully investigate they will probably find that one per cent variation in size will cause a three per cent variation in breaking strength.

In the meantime we would like to have some recommendations on the best spindle speed and twist multiple for 25s and 30s warp yarn from 1-inch Strict Low Middling cotton to be run on tape and band-driven spindles, 5/8-inch bobbin, 2-inch ring, 7-inch traverse, filling wind. Also the pounds break per grain to be expected.

CONTRIBUTOR NO. 6315.

"K. Y." Responds to "Wash's" Call.

Promptly and briefly answers questions submitted to him in March issue . . . . . .

EDITOR COTTON:

On page 81 of the March issue of COTTON, "WASH" is paging "K. Y. (MASS.)". That's me. I see that our old friend "WASH" is trying to get me into an argument again, so I have decided to answer his questions, but I will answer them in what I consider the practical way, omitting all of the fancy figures and words.

Question No. 1. "On the Houldsworth principle the bobbin and spindle travel together. Now, why do we have a difference of 10 teeth in the bell gear on all new differential motions?"

Now, I consider that question nothing more than a trick question to get me into a useless argument. I will make my answer short and to the point. Who cares why, when the builders of machinery have solved that problem for us with perhaps years of research work. Our job in the mill is to look after the machines, give them the proper care, and the results will follow.

Question No. 2. "Being such a practical man, I would appreciate 'K. Y.' grading me on the following: All dry fibers are poor conductors of electricity and are therefore easily susceptible to being so electrically charged as to render manipulation difficult. What is the cure—moisture or oil?"

My answer is moisture, as we get good results with humidification.

Question No. 3. "Which has the most drastic efficiency, the shell or the solid roll?" My answer is, the shell roll.

Question No. 4. "If a 27-inch doffer makes 14 r. p.m. and the cylinder 175 r.p.m. on a card, what should be the speed of the comb pulley?" My answer is that the speed of the comb pulley should be determined according to conditions. The proper speed is just enough speed to take the web off the doffer. My comb pulleys run 1800 r.p.m.

Question No. 5. "Why is a special cone belting required in the bobbin lead system?" What does "WASH" mean—a special cone belting on the bobbin

The Story of Cotton

This is the ninth of a series of advertisements telling the story of cotton from its earliest cultivation in India and Peru to present times.

IX. RUNNING THE BLOCKADE

During the war between the States, cotton was for all practical purposes the only security upon which the South could borrow the money it so sorely needed for the purchase of munitions. And the North, with its mill towns idle, set almost as high a value upon the fleecy commodity as the South. So blue clad soldiers seized cotton as contraband; and whenever a Confederate force retreated, the Southern soldiers bravely burned their only source of wealth to keep it from falling into the hands of the enemy. Thousands of bales of cotton went up in smoke.

Even so, some cotton slipped through the battlelines to mill towns at home and abroad. The risk was great but the reward was heavy. Jim Fiske bilked the Federal government out of hundreds of thousands of dollars by selling back to it cotton which it had seized in its own name as the spoils of war. He operated in Memphis and New Orleans and his methods were those of the corruptionist; it is said that he spent $800,000 in one day in New Orleans. And Jubilee Jim was not alone. There were many of his kidney operating behind the Union lines.

The other side of the picture is cleaner and more exciting. It is washed by the tangy salt air of the open sea: and it is punctuated by the deep bass roar of the guns of the Federal Navy.

When the cotton shortage in Europe became acute, it was only natural that the more daring of European business men should seek some way of eluding the blockade set up along the Southern shoreline by the United States Navy. So they built ships especially for the trade, all hull and engine, for cargo capacity and for speed. They were manned by officers—many of them on leave from the British Navy—and crews who thrilled to the excitement of their calling almost as much as to the pay, which was high. But the risk was heavy. The slim black craft played a game fraught with danger. One shell from a battleship would sink the staunchest of them. A terse "lost at sea" was the epitaph of more than one daring mariner who ran the blockade.

The profits of this trade were enormous. The blockade runners brought the essentials of war to the Southern ports, but on their return trips, cotton—as much as deck and hold would accommodate—was all their cargo. And often cotton paid for the ship in a single voyage. Their chief base was in the Bermudas. From there they plied to the ports of the Carolina coast with their contraband lading. And others from other ports sailed to the mouth of the Rio Grande, where the Mexican city of Matamoros grew to boom proportions on a cotton fostered commerce.

It all ended with Appomattox. Lee's signature to the terms of his surrender wrote finis to a chapter in the story of cotton stained here and there by the acts of unscrupulous, greedy men, but made shining on other pages by the bold deeds of men who dared much in a brave cause.

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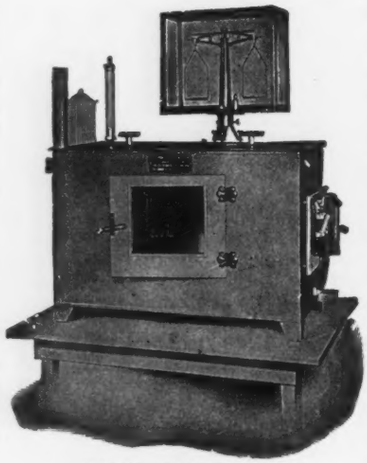

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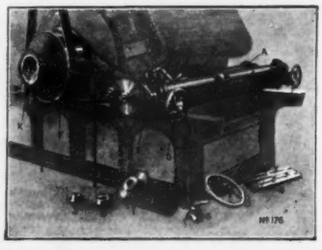

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"Have been able to grind clothing dating from 1907 in such a manner that it is now working faultlessly."

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lead? Is he trying to insinuate that his pet system (the flyer lead) does not require a good quality belt on the cones? My claim is that any belt that runs on cones with a shipper should be endless. As it is one of my duties to keep account of cone belts, I have the figures on the life of cone belts in our plant. The average life of the English type belt we have been using is five years and two months. We also use a rubber belt, and the life of this belt is three years and one month.

Question No. 6. "Was twist inserted into yarn before the invention of the traveler? If so, why should we credit the traveler with being the only agent to insert the twist in ring spinning " My answer is that of course twist was inserted in the yarn before the invention of the ring frame. It is still being done in a few mills on mules. But what does "WASH" mean that we credit the traveler with being the only medium to insert the twist in ring spinning? My theory in this matter is that a traveler has nothing whatever to do with inserting twist in yarn. The traveler's work is to wind the yarn on the bobbin, the same as a flyer does on a speeder.

Now that I have answered "WASH'S" questions I would like to give him a little advice. He should try questions that will bring out practical and useful answers, and not ask questions to trip a man up. If "WASH" asks puzzles I shall ask him one later which I am sure will knock him for a loop, but in the meantime, why doesn't he try cross-word puzzles?

K. Y. (MASS.)

More Comment About Setting Front Plate and Other Card Room Topics.

"T. A. B." re-joins the ranks in discussing some of "Wash's" questions . . . . . .

EDITOR COTTON:

Away back in the March 1933 issue of COTTON, on page 49, I read the letter of "WASH (R. I.)", replying to the questions of "CONTRIBUTOR NO. 6172", who wanted some criticisms on his card settings.

In the tenth paragraph of his letter in March, 1933, "WASH", discussing the letter from "CONTRIBUTOR NO. 6181", said it was hard for him to disagree with "CONTRIBUTOR NO. 6181" but that he had made a bad break when he stated that, "The place to set the front plate is to turn a flat until it is about in the center of the top of the plate, and the plate is set up or down according to the amount of waste required."

"WASH" goes on to say that there is not one carder in a hundred who would agree with "CONTRIBUTOR NO. 6181"; that in all of his experience he never knew a front knife plate could be set up or down.

Well, perhaps "WASH" is right in saying he never knew that this could be done, but nevertheless it is done. I think "WASH" is the one who made the bad break.

This plate, when being set, is moved up or down. If we set the plate closer to the cylinder it is moved downward; if we set the plate to a wider setting, the plate is moved upward, or raised up away from the cylinder, which I think is an up-and-down adjustment. I don't know just how much experience our

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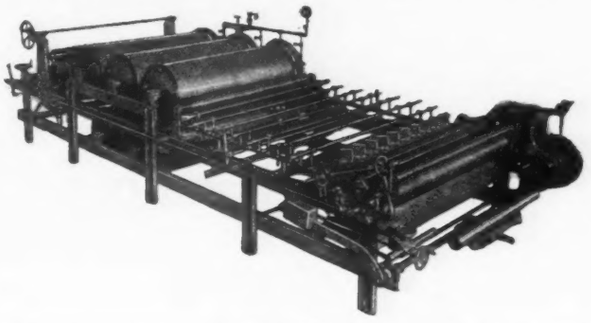

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That we have and alway have had the best rayon warp sizer is confirmed by the fact that well over 6 times as much rayon, acetate and other synthetic yarns are sized on Johnsons as on ALL other rayon sizers in the world combined.

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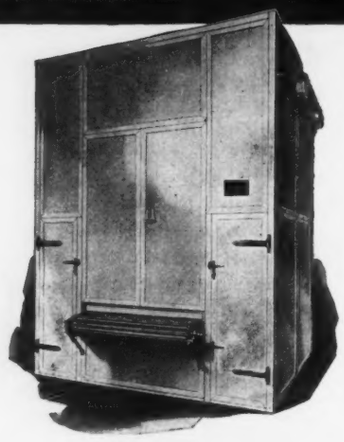

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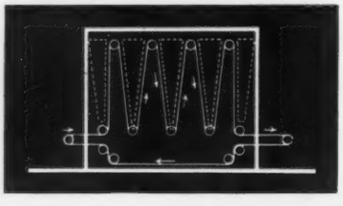

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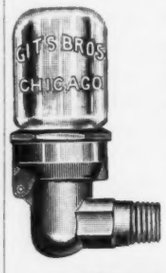

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friend "WASH" has had in setting cards, but in the second paragraph of his letter he reminds us that he has had more than his share of space in COTTON for over 20 years. Having this in mind, I do not think he ought to be quite so severe in his criticisms about things he never knew about. I don't really think he understands what our friend did mean. I might say at this point that I have seen hundreds of grinders set the percentage plate or front plate, as most grinders call them, by putting the gauge in between the plate and flats and adjusting the plate accordingly; whereas most grinders place the leaf gauge between the cylinder and front plate, the same results being accomplished.

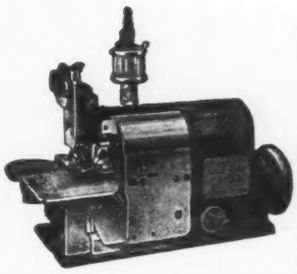
In the eleventh paragraph of his letter, "WASH" said that he agreed with the 10/1000 setting for a licker-in; that there is no combing action at this point and that on the other hand, should a lump of cotton escape the feed plate and the mote knives there would be a jam.

I think if our friend "WASH" would try a few different settings at this particular point he would find there is combing action between the licker-in and cylinder. And please let me remind him that regardless of the setting between the cylinder and the licker-in—whether it be a 10/1000 or a 15/1000—should a lump of cotton escape the feed plate and mote knives the result would be a jam. There is not enough difference between any card grinder's settings to prevent a jam should a lump go through the card.

In the thirteenth paragraph regarding the setting of the flats, "WASH" said that the closer the flats were set the weaker the yarn would be. I might say that I have taken lots of tests and have used about all the different settings advocated by some of the best carders in the country for both breaking strength and cleanliness, but I have never found that setting the flats close reduced the breaking strength, and I have set them close in my time. There is more than one place where the fibers of cotton are damaged, both before going through the card and after they leave the card. The wire of the cylinder and doffer and flats should be kept clean and sharp. The plates should also be kept clean and free from rough places so as to keep the fibers from accumulating and being pulled through in bunches. Special attention should be paid to the feed plate, and back plate; I think if there is any tendency of the fibers being damaged it will be on account of the back plate being broken, or damaged in some way, causing the fibers to cling and be taken through in bunches.

In his fourth paragraph, "WASH" said that he had repeatedly stated in this department that when a contributor gives a certain setting that he should also give the reasons for that particular setting. Before closing I might say that I think "WASH" ought to give the boys a little explanation as regards why close settings of the flats will make the yarn weaker; also why there isn't any carding or combing action between the licker-in and the cylinder. I hope that other readers of COTTON will also give us their views in the near future.

T. A. B. (MASS.)



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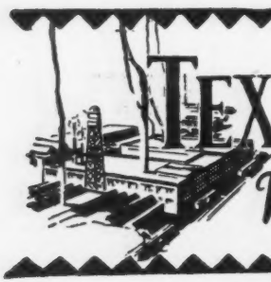


TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

2. Pepperell Equipment—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

10. Leathers, Textile—Booklet No. 101, 48 pages, illustrated. Showing "Bondaron" Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. The Powers System of Thermostatic Control—"Slasher room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

28. Akron Belting—Practical Rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

63. S-W Paint Standardization Plan—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Why Cooper Hewitt Light is Better Than Daylight—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Po.table Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

70. Fafnir Ball Bearings for One Process Pickers—outlining the advantages of ball bearings in guaranteeing smooth, accurate motion, particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

78. Booklet L 1289 A—Loom Motors and Control—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept., C-11, Dayton, Ohio.

90. Atwood Baaklet—Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

91. Illustrated Buyers' Guide and Catalogue—Of interest to every dyehouse executive, not only telling what dyehouse equipment is available in Monel Metal but also where to get it. The International Nickel Co., Inc., 67 Wall St., New York, N. Y.

93. Metso — Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

94. New Development by Onyx—Eight page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. Suggestions For The Modern Silk and Rayon Throwster—describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

100. Bulletin 174, Controlling, Recording, Indicating Instruments for Temperatures, Pressures, Humidity, Flow. 40 page booklet illustrating with installation photographs the uses and advantages of instruments built to meet definite requirements. Foxboro Co., Foxboro, Mass.

102. White and Light Shade Cotton Fabrics Dyeing and Finishing. National Oil Products Co., Harrison, N. J.

103. Throwing Rayon Crepe. National Oil Products Co., Harrison, N. J.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

109. Some Properties of Starch and Dextrine—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

110. 3-In-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

113. Card Room Testing Equipment—describing the advantages gained by having the product of the card room machinery tested in the same way as the yarn is tested in the spinning room. The Belger Co., 36 Pleasant St., Watertown, Mass.

114. Denman Parts for All Makes of Looms—showing drawings and dimensions of Denman pickers, hold-ups, bumpers, and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines—Hermas Machine Company, Walburton Ave., Hawthorne, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

118. Cotton Picking, Opening and Cleaning Machinery, Cards, Combers, Roving, Drawing, Spinning, Twisting, Rings, Worsted Machinery and Woolen Machinery — Pamphlets are issued on each of the individual machines. Will be sent to subscribers who make requests on the letterhead of the mill and indicate special pamphlets desired. Whitin Machine Works, Whitinsville, Mass.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

125. More Light with Lasting Cleanliness—a booklet pointing out the many advantages of white paint and the qualities to be looked for to get the greatest value in such paint. U. S. Gutta Percha Paint Company, Providence, R. I.

126. Improved Lucas Underclearer Rolls—giving details of the many advantages of this roll for spinning frames, mule frames and roving frames. The L. M. Hartson Company, North Windham, Conn.

132. Houghton on Sizing Products—Thirty-two pages of valuable information on sizing of cotton warps and yarns. Gives detailed information on how to conduct sizing tests and contains tables for recording results. It describes the requirements of different types of yarn and gives actual formulas for producing desired finish. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

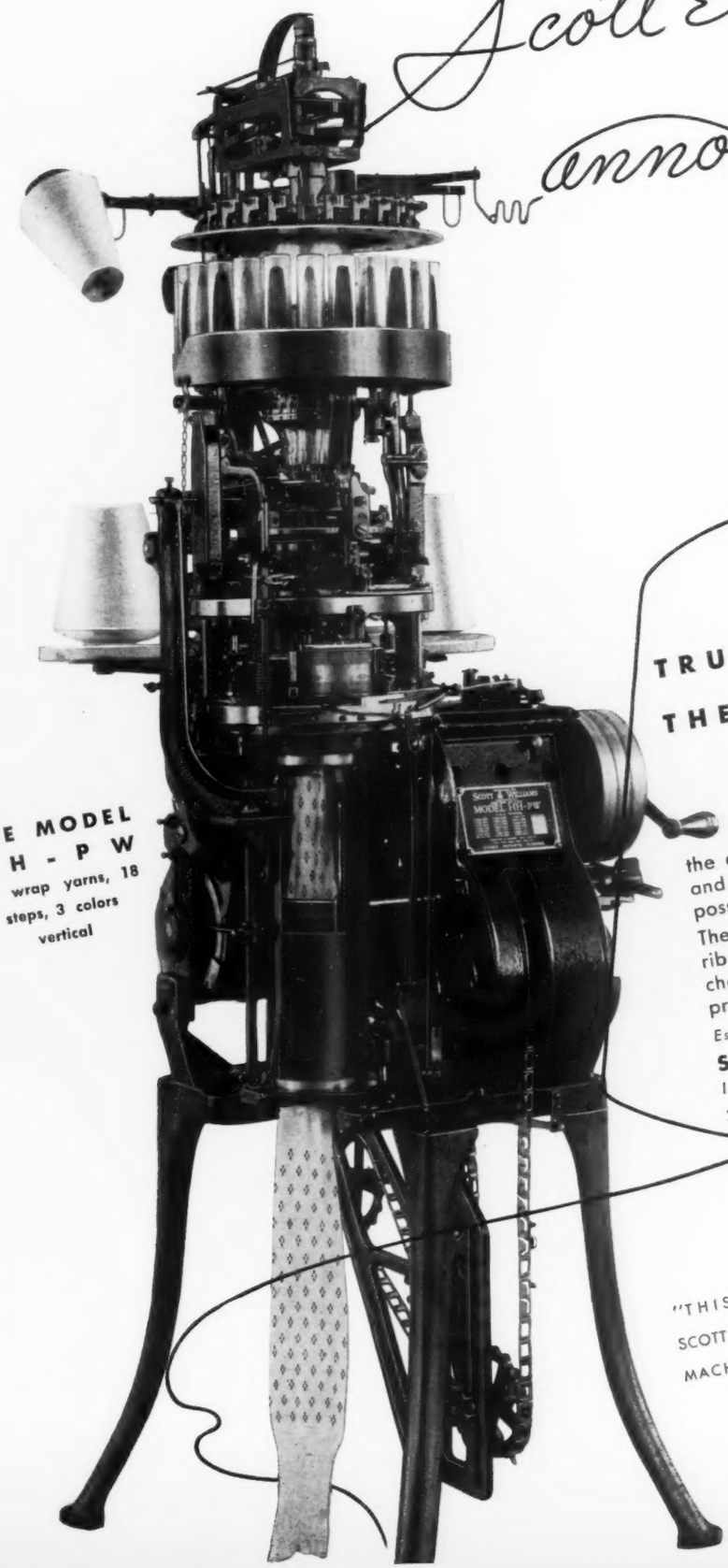
136. Launder-Ometer—16 page booklet describing the Launder-Ometer which will tell you quickly whether laundering will cause your products to fade, shrink or deteriorate and just how many trips to the laundry they will stand. Atlas Electric Devices Co., 387 Superior St., Chicago, Ill.

137. Paramount Dual Heat Hosiery Finishing Machines—12 page booklet describing the Paramount Dual Heat Hosiery Finishing Machine which gives perfectly balanced heat and reduces hosiery drying to a scientific certainty. Paramount Textile Machinery Co., 538 S. Wells St., Chicago, Ill.

138. Constant-Level Oilers—Booklet describing oilers which maintain correct oil level at all times, preventing burning out of motors and bearings. Gits Bros. Mfg. Co., 1851 S. Kilbourne Ave., Chicago, Ill.

KNITTING SECTION

Scott & Williams announces



THE MODEL
H H - P W
24 wrap yarns, 18 steps, 3 colors vertical

TRUE WRAP ON THE MODEL HH

The Model HH-PW (Panel Wrap) Machine retains all the desirable features of the HH, and in addition makes True-Wrap possible.

The Model HH-PW is an automatic rib top, True-Wrap machine with characteristic HH economy and HH production.

Established 1865
SCOTT & WILLIAMS
Incorporated
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"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

PARAMOUNT DUAL HEAT
Hosiery Finishing Machine

The Culmination of Twenty-Five Years of Paramount Progress

Creating Incomparable Quality in Hosiery Finishing and Establishing Production Figures that are truly amazing, the Paramount Dual Heat Machine will revolutionize and simplify your hosiery drying and finishing methods.

Compare this Machine with your present equipment. You will find that it requires less square feet of floor space per dozen than any existing method of finishing; less steam consumption—heating is direct; less power —a one-quarter horsepower motor operates the entire machine; less investment per dozen — reasonably priced; less upkeep — built to render years of service; and production possibilities with quality work that cannot be challenged.

You need not change your budget for 1934. Machines will pay for themselves in direct savings to you.

Write for Descriptive Booklet.

Paramount Service With All Paramount Products

PARAMOUNT TEXTILE MACHINERY CO.

Main Sales Office

538 S. Wells Street Chicago, Ill.

Knitting Arts Exhibition is Success; Association Meeting Constructive

THE 1934 Knitting Arts Exhibition of the National Association of Hosiery Manufacturers established a record of which probably few textile manufacturers' organizations can boast, in the matter of bringing together continuously through three decades manufacturers of machinery and supplies for the knitting industry. During thirty years, without a break, the hosiery body has staged a machinery and supplies display annually, winning each year the hearty co-operation of an increasing number of progressive industrialists who have played their full part in simplifying the production of more and better stockings at a gradually lowering cost per unit.

In this year's show, which opened formally without ceremony on April 23 and was closed on Friday, April 27, in conformity with a custom as old as the expositions themselves, there were 30 new exhibitors, it was stated by the manager of the show, Albert C. Rau, to whom the hosiery association gave free rein in his planning to make the show a more attractive one than its immediate predecessor. Instead of the straightly right-angle arrangement of aisles or streets for booths, he opened up a unique vista as the first greeting for the visitor entering the exhibition by the main door. A broad central aisle, to which old timers and attendants at the exhibit gave the name "Midway" was broken midway between the front and rear ends of the big show room by an artistically designed fountain from which Schuylkill river water was kept playing, from the daily opening to closing of the bazaar for the hosiery knitting trades. Around this fountain, with a cross-aisle extending to either side of the hall, was a generous area of open space designated Rest Room.

The main corridor led directly from the entrance to the aggregation of seamless knitting machinery, most of it in operation until 10:00 o'clock nights in disregard of codes—if there are any relating to work hours in affairs of this character.

The Knitting Machines

The knitters' old friends—Hemphill, Scott & Williams, Standard-Trump, Brinton, and Wildman—were more readily accessible this year by reason of the "midway" arrangement, and each booth held the rapt attention of throngs of mannfacturers and subordinate executives. The re-arrangement of the booths around the "midway" aided also in the general accessibility and "visibility" of all of the booths in the show, which covered an extensive range of machinery, equipment, supplies and services for the knitting trades.

The circular machine exhibits were, as usual, in operation, showing the latest developments in these machines and their attachments. Brinton featured ribbers on infants' tops in plain, stripe and mesh styles; Jacquard top ribbers for boys' hose with rubber inlay; and fancy jersey machines. Scott & Williams emphasized the 25-step Model K spiral gusset-toe machine for women's; HH for heavy half hose; ES with 36-wrap finger yarns and color-in-color and color-beside-color attachments; and a 25-step K spiral, with the new gusset-type square heel and elastic welt attachment. Standard-Trump emphasized an 80W model with new shogging device for making shog-wrap hose; a two-feed needle reverse-plaiting H machine; and a 70-gauge H with a new automatic double-sole cutter and evening attachment.

An outstanding feature of the Hemphill booth was a demonstration of the new Banner rapid transferring method in combination with the Banner automatic clamp weight. This new method provides a sleeve cylinder so that the rib stitches are transferred to low needles which are held rigid and firm by the cylinder construction. The sleeve cylinder is raised by means of a small foot-pedal so that the operators' hands are free to hold the transfer ring. After raising the sleeve cylinder the operator simply inverts the transfer ring over the needles and drops the cylinder back into its original knitting position by removing her foot from the pedal. Simultaneously with the dropping of the cylinder, she pulls a chain which brings the clamp weight into action. This clamp weight reaches up into the cylinder and grabs the rib top to hold the stitches firmly on the needles. The weight then provides a slight tension while knitting which improves the appearance of the fabric. Adjustment can be made for any length of stocking; the clamp weight automatically disengages from the stocking when knitting is finished. A knee action tripping lever is provided to start the machine after the carrier ring has been dropped to the knitting position and a special safety lock is provided so the machine cannot be started until the carrier ring is securely locked. After the machine is started the cylinder makes four revolutions to assure that the rib stitches are in the throat of the sinkers. The cam block then drops into action automatically and immediately the yarn lever drops into action, introducing the leg yarn. Thus it is not necessary for the operator to insert her hand in the cylinder, nor to turn the machine by hand after transferring the rib stitches.

It was commented that, while it is related in a report of a recent survey of the hosiery industry that 30 per cent of the production is of full-fashioned construction, the Wildman Mfg. Co. was the only exhibitor showing full-fashioned knitting equipment, the single-head machine, having in operation 45-gauge machines with what was referred to as built-in mech-

anism for producing the so-called ringless type. This single-unit or head machine is equipped with automatic rack-back that brings the machine back to starting position with the new yarn ready to hook on the welt-bar, and an easily operated welt-turner. The company also demonstrated its underwear and sweater machines and a type in successful operation in the knitting of fabric for snuggies, a term applied to an item in lingerie not usually referred to by its correct name in assemblages of dignified society.

H. W. Anderson, president of the Fidelity Machine Co., tried to put in much time at that company's booth, displaying the company's later models of devices for enriching hosiery in design and color effect. This display, at the front door of the midway, had as its vis-a-vis the drawing room of the Textile Machine Works, exhibiting only its hosiery inspection form and a transfer stamping device, the latter under demonstration in its application to chiffon silk, plain cotton, mercerized yarn and brushed wool fabrics, the latter for knitted outerwear.

The Textile was one of three builders of what has been termed "conventional legger-footer" outfit, in contradistinction to the single-unit frame producing the complete stockings except as to the seaming, who were represented. Louis Hirsch, another exhibitor, may be no more enthusiastic over the performance of the single unit machine and its future than its other advocates, but impresses one as being 100 per cent sincere; and he emphasizes the fact that the machine is constructed in an American factory—at Reading, Pa., as well as the original plant in Saxony. Alfred Hofmann, Inc., representing the single unit machines installed in several American mills, had many visitors to their drawing room, which comprised a half-dozen regulation booths. It was apparent that while the hosiery manufacturers were engaged at a downtown hotel in trying to lift the full-fashioned industry out of a losing rut by penalizing sales at less than cost, there had been no subsidence of interest in the installation of full-fashioned hosiery knitting equipment notwithstanding enormous additions last year in the productive capacity of mills supplying seamless hosiery, at present an unusually lively competitor of full-fashioned.

New Finishing Development

A new finishing machine shown for the first time this year was the Tube-Tex machine for tubular knit goods, which extracts, processes, dries, finishes, conditions and measures tubular knit goods in flat form, all in one continuous operation, with two operators, at a running speed of 25 to 36 yards per minute. An average 100-yard roll passes from soaking wet to the finished state in from 3 to 5 minutes, it was pointed out; the machine giving accurate control of moisture regain.

The newest developments in bobbins, hosiery inspecting equipment, needles, throwing and winding equipment, microscope and laboratory equipment, needles, cutting machines, dyeing equipment, conditioning machines, textile oils, soaps and other specialties, spools, trade-marking machines, equipment and methods, drying forms, and machines, sewing machines, etc., etc., were to be found among the several scores of booths devoted to these and other adjuncts to the mill, covering a scope too extensive for detailed discussion here.

Yarns of various kinds—silk, wool, rayon, cotton, mercerized, and rabbit hair—comprised perhaps the largest group of exhibits devoted to one type of commodity or product. 400s/1 cotton yarn, spun in this country, was perhaps the finest number ever seen—this was displayed by Boger & Crawford, its manufacturers. Conspicuous also among the yarn exhibits were Johnston Mills, Dixie Mercerizing Co. and Standard-Coosa-Thatcher Co. and American Yarn and Processing Company, and others in the large southern contingent; Aberfoyle Mfg. Co. and Clarence L. Myers, of the Philadelphia group featuring Durene. "Lastex" yarn came in also for its share of attention.

There was much in the exposition that was highly educational in relation to silk, as attested by a study of the exhibits of the silk committee of the National Association of Hosiery Manufacturers. Outstanding among the testing devices at that booth was one for proving the various essentials in the qualities of silk. Illustrating the advances in developing devices of this character, original models of 35 years ago were of wooden frames. The new inclined plane serigraph, an accurate testing machine, combines precision with definiteness in recording.

At the same booth was shown a Julius Kayser & Co. device known as a hosiery evenness cabinet, its use being better understood after a reference to a series of photographs, which showed irregularities —streaks, rings, stripes or shadows—which do not exist in the "ringless". That is to say, the blemish, whatever it may be, due to characteristics of silk used in constructing the stocking, are not visible on the legs of a wearer, although they may stand out quite distinctly under one arrangement of lights in the evenness cabinet. Under another arrangement, described as flood-light, these blemishes may not show. If they do, the stocking is cast aside as a "second". If they do not, then it is a safe assertion, said demonstrators of the evenness cabinet, they cannot be detected on the legs of persons wearing the stockings. A customer buying a pair of stockings may, if she hold the stocking between eyes and the light, see streaks that would cause her to say, "These stockings are not ringless". If these same stockings had stood the test of the unevenness cabinet and she drew them over her legs, she would detect no rings or shadows or other imperfections.

Getting back to ringless hosiery, and admissions that rings are to be laid entirely to the habits of the silk worm, there was going about the exposition that story of the scientist who set out to cultivate a type of worm that would spin its cocoon of silk distinguished for evenness, and to help the worm along in this ambition to improve its product, the scientist suggested a uniformity of mulberry leaves on which the worm thrives. It was said he found out that it would be more costly than equipment of full-fashioned hosiery machine with three yarn carriers.

While there was not perhaps the usual amount of

actual buying of machinery, equipment, etc., by knitting manufacturers visiting at the show this year, their interest in what was to be seen there was unabated. Leading exhibitors felt that the failure to secure actual purchases in great volume at their exhibits was due largely to the element of uncertainty of a political nature and its effect of causing the industrialist to be hesitant as to future commitments. With the early clearing up of much of the doubt and threats now hanging over industry, it was felt, the interest engendered by and expressed at the show will later result in material purchases.

Hosiery Association Meets on Wednesday

A ONE-SESSION meeting constituted the annual convention of the National Association of Hosiery Manufacturers, held at Commercial Museum, Philadelphia, on Wednesday, April 25, in connection with the Knitting Arts Exhibition. Association matters occupied the program largely, which included an interesting and valuable report of the organization's silk committee, made by E. N. Ditton, of the Gotham Silk Hosiery Company.

William Meyer, of Apex Hosiery Mills, presided, as president of the association, assisted by Earl Constantine, managing director of the body. Formal approval was given to the change of name of the organization from National Association of Hosiery and Underwear Manufacturers to National Association of Hosiery Manufacturers. Announcement was made that in view of the added expense to individual manufacturers in maintaining the industry's Code Authority, and the acquisition by the Authority of much of the Association's work, dues in the Association had been reduced approximately one-half by the board of directors. Several statements were made, however, emphasizing the increased importance of the Association as the representative of the industry, in governmental affairs and other matters.

John Brine Elected President

John H. Brine, president of the Rollins Hosiery Mills, Des Moines, Iowa, was elected president of the Association, succeeding Mr. Meyer, who has filled that position for three years. As vice-presidents, representing the two geographical divisions of the industry, William H. Gosch, of Nolde & Horst Co., Philadelphia, and Austin H. Carr, president, Durham (N. C.) Hosiery Mills, were named. Ernest Blood was re-elected treasurer. Five new directors were named: J. H. Davenport, Davenport Hosiery Mills, Chattanooga, Tenn.; H. J. Herbst, General Hosiery Mills, Philadelphia; R. O. Huffman, Morganton Full-Fashioned Hosiery Mills, Morganton, N. C.; E. S. Jamison, Joseph Black & Co., Reading, Pa., and M. V. Moss, No-Mend Hosiery Mills, Philadelphia.

In connection with the change of name and reincorporation of the association as a New York body, it was announced provision had been made for 15 directors instead of 8 to permit more extensive representation on the board by various groups in the industry.

A resolution of high praise and appreciation to Mr. Meyer, for the past three years the association's president, was unanimously adopted. Another resolution endorsed the actions of the board of directors and officers for the past year.

E. N. Ditton, of Gotham Silk Hosiery Co., reported for the association's representatives on the joint silk classification committee. The association's interest in the matter started some three years ago, and resulted in its securing equal representation with silk producers and other consumers. Mr. Ditton reported a wider acceptance and use of the nine-meter method of silk testing. He read a letter which had been sent to the Central Raw Silk Association of Japan, which stressed several points of difficulty and trouble in connection with silk as now received. The letter pointed out:

William Meyer, Retiring President . . . . .

(1) That an increase in cleanness defects has taken effect in both major and minor classifications and is particularly serious as regards bad casts, slugs, waste, clusters, long ends, many of which are hidden in the skein end which show up as short heavy places and lines in the stocking and thus produce seconds; (2) a decided increase has likewise occurred in bigs and split threads; (3) cohesion is lower, an increase in brittle threads is noted; (4) there has been a decided increase in size irregularity within the lot, with numerous short lengths of very coarse and very fine ends within the skein; (5) winding costs and waste have been materially increased due to hard gums, double and triple threads, cut skeins and loose ends; (6) boil-off percentages have become more irregular and have increased during the past six months and lousiness is found more frequently than in the past; (7) chops are no longer a reliable indication as to uniformity in quality; the same applies to certificates issued by Japanese conditioning houses; (8) many of these defects occur so irregularly throughout the lot that they cannot generally be found by the present standard testing methods nor removed in the throwing or knitting processes; (9) there is an increasing number of mixed lots as regards nature and shade; (10) insufficient weight has been given to cleanness and neatness defects in the composite grading in effect since January 1932.

It was pointed out that a new method of classification must be adopted; the committee is working on plans for an international conference on the subject in the fall, where all factors involved can discuss their mutual and individual problems.

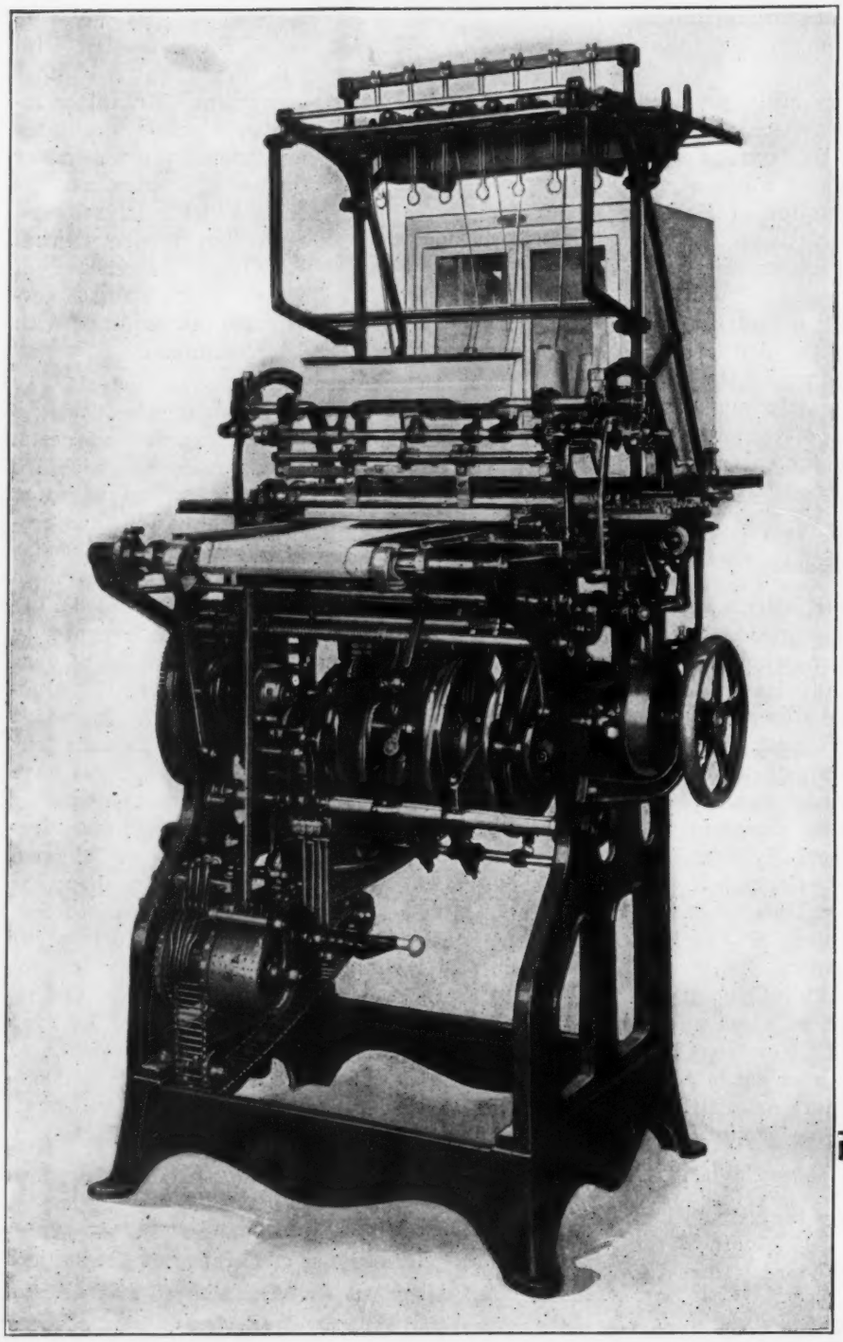
For the second time . . .

The Hit of the Knitting Arts Exhibition!

WILDMAN
THE WORLD'S STANDARD

AT the Knitting Arts Exhibition again this year, interest centered in the revolutionary Wildman Single Head Full-Fashioned Knitting Machine which is now virtually completely automatic as a result of these two important improvements:

1. Automatic Rack-back that brings the machine back to starting position with the new yarn ready to hook on the welt-bar.
2. Easy Welt-turner which is so simple in operation that the welt can be turned with utmost ease.



The
WILDMAN
SINGLE HEAD
Full-Fashioned
Hosiery
Machine

WILDMAN MFG. CO.
Full-Fashioned Division
NORRISTOWN
PA.

Hosiery Code Authority Establishes "Cost Price"

An important meeting of the Code Authority for the hosiery industry, under the NRA, was held at the Bellevue-Stratford Hotel, in Philadelphia, on Monday of Exhibition Week, April 23. It was attended by more than 300 manufacturers from all over the country. The matters of sales below cost, open price, and other matters were included in a six-point program of the Authority, which was announced. This program stated that the Code Authority will proceed as follows:

1. It will take immediate and positive steps to enforce that section of the Code providing that the selling of merchandise below cost is an unfair trade practice. Any manufacturer selling 42 gauge, 4 or 7 thread, ladies' full fashioned hosiery, packed in quarter-dozen boxes, below $5.75 per dozen will be presumed to be selling below cost unless definite proof to the contrary can be shown upon his citation to appear before the Hosiery Code Authority or a duly authorized agency set up for this purpose. It is expected that prices on partly finished goods, as well as on goods of other construction, will be related to the price quoted above. If, in the judgment of the Hosiery Code Authority, any price is not in conformance with this principle, immediate investigation will be undertaken. The burden of proof in each instance will rest upon the manufacturer. Similar course of action will be followed in respect to prices in each branch of the industry.

Open Price

2. The Hosiery Code Authority calls the industry's attention to the N.R.A. office memorandum issued on February 3rd, 1934, which provides that when the Code Authority determines that an emergency exists in this industry and that the cause thereof is destructive price cutting such as to render ineffective or seriously endanger the maintenance of the provisions of this code, it may be declared an unfair trade practice to sell or offer to sell any products of the industry below a lowest reasonable cost. The Code Authority intends to secure the full effect of this order in the hosiery industry.

3. An open price provision in the Hosiery Code will act against abrupt changes in the price structure of the industry and will go far to rid the industry of unwarranted rumors with reference to competitors' prices with their destructive effect. The Hosiery Code Authority is preparing and will promptly submit for approval an addition to the Code providing for the listing of all prices, which prices shall be effective pending due notice of change and shall be available to all persons in the industry. In order to secure identification of the product of each plant, it is proposed to require the placing of a coded identification number on the entire product of each plant.

Hours and Wages

4. The Hosiery Code Authority is strongly inclined to the belief that a further curtailment of productive hours will be to the interest of the industry. It will, within the near future, canvass the thought of the industry on various alternative methods to that end and will be guided thereby.

5. The minimum wage structure provided for in the Code to cover the seamless branches of the industry is effective and has served to very materially raise the actual earnings of the workers in such branches.

In the full-fashioned branch of the industry, however, the minimum wage provisions of the Code are, to a great extent, ineffective. This is due to the fact that in about 90 per cent of the full fashioned plants of the industry there are in effect piece rates which furnish the workers earnings materially above those provided for as minimums. In the remaining minority of mills it appears that the actual wages approximate the minimum wage provisions so that such minimum wages are, to all practical purposes, average wages. This situation results in giving the majority of the full fashioned mills bad competition resulting from unusually low labor costs. Such unfair competition can be eliminated only by a material increase of the full-fashioned minimum wages governing those skilled operations where wide disparity is found to exist.

6. The Code Authority proposes to submit to the Administrator a recommendation for the requirement of certificates for the installation of new machinery, as provided by Article IX, Section 3, of the Code.

On April 27, an announcement was made, in a statement issued by Earl Constantine, executive director of the Hosiery Code Authority, reporting on definite steps taken in a subsequent meeting in the direction of effectuating the various policies announced at the April 23rd conference, as follows:

1—For the purpose of enforcing the provision of the Code prohibiting prices below cost through the device of setting up "lowest reasonable cost prices" on the principal staples of the industry and requiring that lower prices be substantiated with cost figures, it has approved a simple manual of cost principles and definitions to be used by hosiery manufacturers in computing cost, and likewise has approved a uniform cost estimate form which manufacturers will be required to fill out when appearing before the Code Authority in justification of a lower price.

The Hosiery Code Authority has arranged for two of its members to sit in New Yo-k on Thursdays and Fridays of each week, beginning with the week of April 30th, as an agency of the Code Authority with power to act in its behalf in the disposition of cases of violations of the above described price policy. Arrangements have been made for these sub-committees to be assisted by expert accountants.

2—A special committee of the Hosiery Code Authority has been created by it to examine into the various open price methods known for the purpose of devising that method which will best fit the needs of the industry. As soon as such committee reports, decision will be made as to the method to be sought as an amendment to the Hosiery Code and petition will be made to Washington for public hearing thereon.

3—In keeping with its announcement on April 23d, a communication is being prepared addressed to all hosiery manufacturers, presenting the arguments and the facts which, in the judgment of the Hosiery Code Authority, invite a reduction of productive hours without further delay. Such communication will transmit to the members an ample questionnaire on which to record their various views.

4—A new schedule of higher minimums covering full fashioned knitting operations is now in preparation. It is expected that such schedule will be definitely evolved within the next two weeks, at which time petition will be made for a public hearing at Washington thereon.

5—A special meeting of the Hosiery Code Authority will be held before May 15th, at which time further definite steps will be taken on the above matters, as well as action on the proposal to require certificates of necessity for the installation of new equipment.

Comments on the April 23rd Meeting

At the session of manufacturers on April 23rd, when there was a free-for-all discussion of the $5.75 price, several speakers, indicated that evasion of the provision might be simple. It was suggested that as the price provision was not retroactive, numbers of manufacturers ostensibly took contracts for deliveries running through some months. Someone raised the question as to how the price was arrived at, and the reply in brief was that the costs of a number of mills were averaged.

J. S. Gordon of the Massachusetts Knitting Mills asked for some means by which manufacturers selling branded lines nationally advertised to the retail trade would be expected to obtain higher prices than those set by the code. Mr. Constantine pointed out that when the code was formulated embellishments for ifs, ands, and buts were eliminated, as far as possible, but the questions arising during the session would be taken care of in practice.

John Botts, of Harrington & Waring, wanted a price differential on quarter and half-dozen racking.

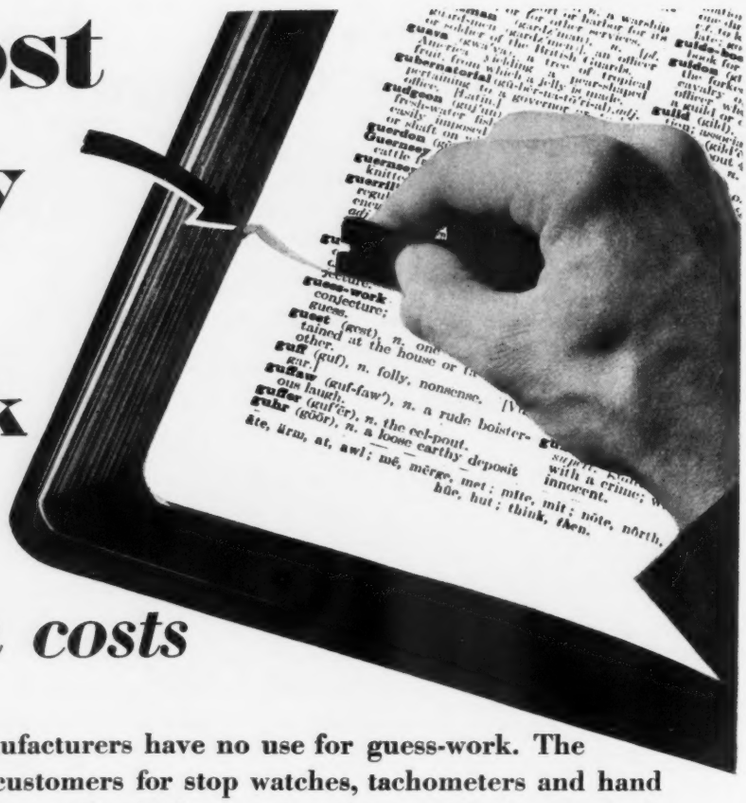
As there has been criticism of minimum wage differentials favoring the South, it was pointed out by Richard Edge of Charles Bacon Co., Lenoir City, Tenn., that it might be appropriate, in establishing price minima, to arrange for a price differential in favor of southern manufacturers as they are at greater distance from the markets. Opposition to a set price for the whole country was based in part on an assertion that there was superiority in the matter of productive efficiency in northern mills. Mr. Constantine stated that he had found southern managements to stack up well with northern managements, but it was represented, in favor of the differential, that when the South prepares to establish a new mill it is necessary to train help, whereas in the North trained help is to be found in almost any community where full-fashioned thrives.

A manufacturer offered a suggestion that there be levied a tax of 50 cents a dozen on all full-fashioned hosiery for the creating of a fund to be applied to the purchase of replacement equipment. Nobody seconded the motion.

The only deafening applause heard in the afternoon meeting was when Chairman Margeson of the committee on price arose to say he proposed that violations of the code be penalized and publicity be given to those proven to be violators.

It's almost that easy

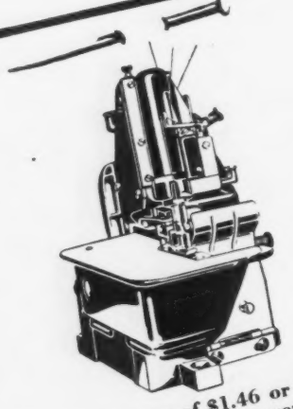
to cut out guess-work *in your sewing room costs*



PROGRESSIVE manufacturers have no use for guess-work. The demand from our customers for stop watches, tachometers and hand tallys proves the precision with which operating facts are being checked.

If there is any uncertainty about your sewing room costs, we can help you get rid of it. Our Form 374 is supplied free. It enables any executive to make an accurate study of his costs for himself. It will pay you to know positively whether your equipment is below present production standards.

Union Special equipment sets the pace both for quantity of output and for quality. There's a machine for your need—whatever that is. Let us show you actual facts regarding their performance. They will help you cut out guess-work.



Daily savings of $1.46 or $408.80 per year per machine were shown by 16 of these "THIRTY-NINE-ONE" overseamers which replaced 21 old machines in a mill specializing on flat knit rayon undergarments. Original investment was repaid by savings in this case in 6.3 months.

UNION SPECIAL MACHINE CO.

400 North Franklin Street

Chicago, Illinois

NRA MEMBER U.S. WE DO OUR PART

An Experience With the Three-Carrier Alternating Attachment for Ringless.

EDITOR COTTON:

With reference to "wash-boards" and mis-matching in knitting with the 3-carrier alternating attachment, being one of the pioneers in this new art of knitting, and having gone through all of these difficulties about which I have read and hear knitters discussing, I have decided it is fair and my duty to impart to anyone interested the knowledge and experience that we have gained along this line. This has prompted me to write this article. I am making it brief and to the point as I feel that knitters having these various difficulties can readily understand and grasp my ideas.

One thing I will say about matching. With the old single carrier method of knitting the fabric was so full of rings and shadows that one paid very little attention to the matching of the leg and the foot if it were only slightly off. Now, with alternating carrier knitting, the fabric is nice and clear and a matching that is slightly off will be very pronounced especially where one sells this merchandise as perfect "ring-free".

Following are some of the causes and their remedies.

Causes: Denier, tension, speed.

Variation in denier can best be overcome by realizing that too low a grade of silk must not be used. Three-carrier work does not eliminate rings, it just minimizes them to such an extent that they appear invisible to the naked eye.

Tension: I run the silk under glass tubes floating in water, which tends to create an even tension. Then also, water is kept at a certain level. I use only a single wire tension instead of the old double wire tension; this tends to let the glass rings work up and down more freely.

I also bring all three main ends as close to the center of the head as possible by having the eyelets in drip pans only one inch apart. This creates drag evenly from one side of the course to the other. We must also try to use direct knitting silk, as the tension varies greatly between a wet cone and a dry cone. Direct knitting yarn will eliminate a great deal of variation in tension from the cones. Tension varies with the size of the cone. There is always more tension from a large cone than from a small cone. Therefore it is advisable to always tie up three cones on one head at the same time. Use pieces to keep the cones on the other heads running out evenly.

Speed: Variation in the speed of the machine will cause variation in the courses per inch. When a machine is running at full speed and is stopped for some cause or other, and is then started up again running first three courses slow to be sure all three-course carriers are knitting right, you are knitting three tight courses in the stocking. When the speed of the machine is increased, looser work is knit, and when the machine is slowed down, tighter work is knit. Also when the machine is kept idle for a short while, it is always advisable to wet the needles with some oil and water solution, because, as you know, there will be knitting three courses of dry silk before knitting again with wet silk. One must always remember that in knitting three-carrier work, such things as tension and dry silk will increase threefold and therefore must be given about three times as much attention.

In closing I will say that alternating carrier knitting is here to stay as the possibilities are unlimited. At one time critics said that with this type of knitting a mill is limited to only a few styles. We have disproved this as we are now able to make any style on machines equipped with the alternating carrier attachment.

W. M. G. (N. C.)

◆ ◆

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

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If your own dyeing facilities are limited we will be glad to dye up sample lots for you at our mills. Or we can send our color expert to work with you on the ground, originating new shades for your line and generally helping you with your color problems.

Either way, by availing yourself of the Aberfoyle Color Service you will be assured of greater dyeing economy and the production of a more marketable line. Mercerized by our exclusive process, Aberfoyle level-dyeing yarns not only have greater absorption and require less dye, but they take rich, bright colors that have considerably more "eye appeal".

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Receiving, Checking and Testing Rayon and Other Knitting Yarns.

EDITOR COTTON:

For the benefit of those interested, the following questions from "CONTRIBUTOR NO. 6110", published in a recent issue, are quoted and discussed in order:

Question No. 1. I want to know just what is the proper method of handling yarn from the receiving room to the knitting room, in half-hose mills and other knitting plants.

Answer. Some assumptions are necessary in dealing with this question; the first of which is that the receiving room is the main yarn storage room and so situated that it is not convenient to issue the yarn directly to the knitters as needed; second, there is insufficient room in or adjoining the knitting room for full cases as opened; third, there is sufficient space available in a supply room, rack or shelves in or adjacent to the knitting room to carry a day's supply of yarn.

With this situation existing, the first requisite is a competent, dependable receiving and disbursing clerk in charge of the stock, fully responsible for the correctness of records of receipts and balances as reported each day.

It is essential that daily reports of receipts, disbursements and balances be made to the purchasing agent in order to avoid excess accumulation of stock as well as to prevent stock getting so low that machines will have to be shut down before additional yarn deliveries can be obtained.

With this taken care of, it is advisable to have yarn storage bins in the receiving and stock rooms

COUNT____ GRADE____ COLOR____ BIN Nº____

DATE	REMARKS	IN LBS.	OUT LBS.	BALANCE LBS.

FIG. A

for the different grades of yarn. When a shipment is received and checked for correctness of weight, quality, size, color, and fastness, it is carefully packed in these bins. In a convenient place on the front of these bins should be a perpetual inventory card, Fig. *A*, with space for date, receipt, disbursements, and balance for entry of every lot in or out of the bin with balance. If preferred the bins may be numbered and these cards kept in a convenient card file.

As a further check, and also authority for issuing yarn to the knitting room, a duplicate order should be used as a requisition, Fig. *B*, signed by the authority in charge of such in the knitting room. Upon presentation of this order in duplicate to the receiving and storage clerk by the yarn boy, the number of cones and weight of the proper yarn requested is issued and recorded both on the bin card and requisition and by whom and the original kept by the stock clerk and filed and the duplicate returned with the yarn issued to the knitting rooms and this duplicate kept on file as long as necessary there.

Knitting room requisitions should be for a day's requirements as smaller issues involve too much detail.

For handling the daily issues in the knitting room, the space referred to in our third assumption is used. The day's requirements stored in this space are issued to the knitters as needed by the knitting room yarn boy or clerk responsible, in charge. Owing to the limited space for this purpose all inactive

YARN REQUISITION Nº_____

TO_____ DATE_____

FOR_____

COUNT	GRADE	COLOR	REMARKS	NEED CONES	NEED LBS.	ISSUED CONES	ISSUED LBS.

BY_____

FIG. B APPROVED_____

yarn when it becomes such is wrapped and returned to the receiving and storage department with a return order for this purpose, the same as the knitting requisition but of a different color.

Yarn should not be unwrapped until ready for use, and should be wrapped again when returned to the bins to prevent drying out, fading, soiling, or other deterioration. Furthermore, all yarns should be handled carefully and never thrown around, pitched in bins or dropped on the floor or otherwise roughly treated.

In addition to this perpetual stock method as outlined and for verification of the correctness of records, it is desirable to make physical inventories every four weeks, or at least as often as is necessary to wipe out discrepancies or errors that will creep in.

This outline may appear burdensome unless tackled with determination, but try and do anything that requires little effort and the results turn out to be about as valuable as the effort.

Question No. 2. When a case of yarn is received, just what is the best method of arriving at the net weight, when a small mill does not unpack the case except as the yarn is used at the machine?

Answer. In this instance where the case of yarn is not unpacked except as used at the machine, only compromise methods fit, and unless the gross tare and net weight are checked completely as cases are opened, the finding of a shortage would be of little help in establishing a claim for it. To dispense with this work it is advisable to deal only with A-1 concerns and accept their weight with a gross weigh-in or thoroughly check cases from time to time.

Question No. 3. How would you go about calculating the exact oil allowance (in rayon) which should be made when arriving at the net weight of the yarn? What is the proper test to make?

Because they know it pays

Because they know *to what extent* their profits are in their "firsts", and their losses are in their "seconds"—

Because they know *to what extent* their profits are in the machines that are producing, and their losses are in the "shut-downs"—

America's leading manufacturers of fine quality silk stockings are nearly all standardized on Royersford Needles—because they know *to what extent* IT PAYS.

That we are America's largest producers of Spring-Beard Needles is a tribute to PROFITABLE performance.

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The prescription for better knitting

ROYERSFORD NEEDLES

Answer. This is a well equipped laboratory problem or one for the United States Testing Company or others doing this type of work. However, in buying from producers or reputable converters one may rely on getting what he pays for. It is of interest, however, to mention some information obtained along these lines from past experiences.

Rayon is sold by producers on a net weight basis plus eleven per cent moisture regain and full allowance for oil content whether 1, 6 or 10 per cent. Owing to variations the oil content may vary some from the designated percentage, but if not accounted for in deducting for the actual oil content it is offset by an equivalent moisture variation more or less as the case may be, but never sufficiently to affect the running qualities of the yarn, and in either case the purchaser is invoiced bone dry yarn plus 11 per cent regain arrived at in a very thorough manner to secure full value.

One way of arriving at weights for invoicing is to take 100 pounds of bone dry rayon. The accepted moisture conditioning is 11 per cent regain. The invoicing weight is 111 pounds. Assume that 10 per cent oil is specified, which is based on the conditioned weight of the yarn or 10 per cent of 111 pounds, or 11.1 pound of oil. Now the total regain is 11 pounds of moisture + 11.1 pound oil, equivalent to 22.1 pound. The 100 pounds of bone dry yarn + 22.1 pound conditioning = 122.1 pound.

We will now assume that a shipment has been received and must be checked up without invoice. The weights to work from as listed on the case and packing slip are:

Gross weight		147.10 pounds
Case and lining	20.00 lbs.	
Paper and cones	5.00 lbs.	
Tare weight		25.00
Net weight		122.10

Oil content 10 per cent.

From direct weighing, the gross weight checks all right. After removing the yarn from the case and weighing the case and lining it is found to check also. The number of cones are counted as unpacked and found to be fifty, and by estimating from ten or more similar cones and wrappers this weight is perhaps 5.50 pounds instead of 5.00 pounds, as cones and cone wrappers too, sometimes absorb oil from the yarn, therefore this weight is assumed to check. This leaves the 122.1 pounds of conditioned and oiled yarn from which to determine the invoicing weight (122.1 pound less the 10 per cent of oil). Remember the percentage of oil is based on the conditioned (bone dry plus 11 per cent = 111 per cent) weight and 10 per cent of 122.1 pound would be too much deduction for oil. But, 122.1 pounds is 110 per cent, so that 122.1 ÷ 11 = 11.1 pounds. (The oil is 1/11th of the total). The formula for *actual* oil (or moisture) content in per cent is.

$$\frac{\text{Original or Conditioned Weight Less Dry Weight.}}{\text{Original or Conditioned Weight.}}$$

Or, $\frac{122.1 - 111}{122.1} \times 100 = 9.09+$ per cent, and 9.09 per cent of 122.1 pounds = 11.09+ pounds or 11.1 pounds. So, 122.1 pounds — 11.1 pounds oil leaves 111 pounds net conditioned weight for checking against the invoice.

As laboratory analysis of moisture regain conditioning and oil may vary at the expense of each other by showing more or less than the 11 per cent moisture regain and correspondingly less or more oil respectively, the bone dry weight of yarn plus the accepted 11 per cent allowable regain determines the invoicing weight. For this reason an analysis must include the bone dry weight and moisture regain, as well as the oil content, to be correct. For example, we take 100 pounds of bone dry yarn, as above, 11 pounds of moisture (11 per cent moisture conditioning regain) and 11.1 pounds of oil (10 per cent of conditioned weight) and using the bone dry weight find 11 pounds moisture + 11.1 pounds oil = 22.1 per cent total regain. Regain is

$$\frac{\text{Original or (Conditioned Weight) Less Dry Weight}}{\text{Dry Weight}}$$

Or $\frac{122.1 - 100}{100} \times 100 = 22.1$ per cent = regain.

But, using the actual percentage content formula, $\frac{122.1 - 100}{122.1} = 18.1$ per cent actual moisture content plus oil.

Therefore:

The total conditioned and oiled weight =	122.1 lbs.
less 18.1 per cent of 122.1 =	22.1 lbs.
Bone dry weight	100.0 lbs.
To this we add (allowable 11 per cent regain)	
11 per cent of 100	11.0
Net conditioned weight	111.0 lbs.

This last method is unquestionably more reliable since rayon sales are based on bone dry weight plus 11 per cent regain under standard conditions of about 70 degrees F., and at a relative humidity of 65 per cent.

Question No. 4. I am interested in setting up an efficient and accurate system for handling yarn when it is received, so that the individual cases can be checked up for any shortages, heavy sizings, and excessive oil content other than allowed on invoice.

Answer. In addition to the information which I have already given the following suggestions may be helpful. For incoming shipments of yarn, a yarn receiving book, with receiving slips in duplicate and numbered serially is helpful. Fig. *C* gives an idea for this receiving form and a convenient size is 8½ x 5½ inches, bound in lots of 50 sets with the original perforated ¾-inch from the bound end for tearing out, the duplicate or carbon copy to remain intact for reference. As shipments are received and checked in the original copy properly filled out is turned in for the purchasing agent for proper entries and filing, the duplicate remaining in the receiving book, is the receiving clerk's record.

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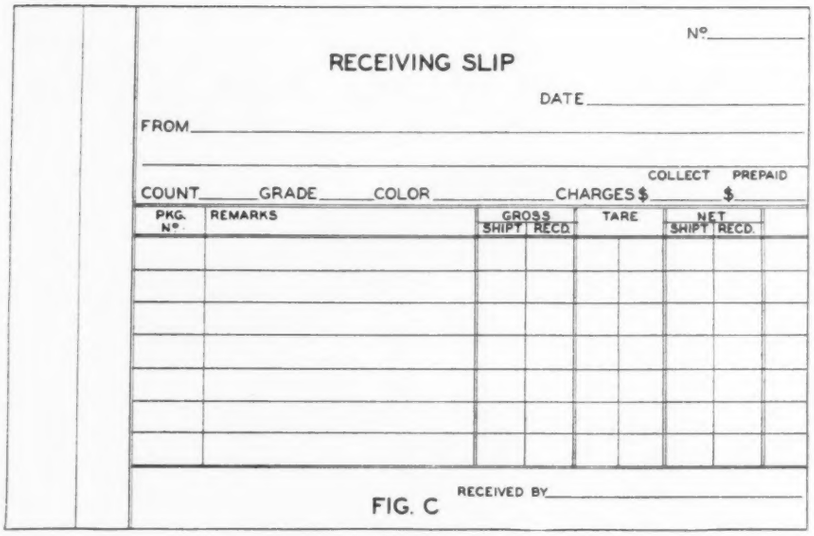


FIG. C

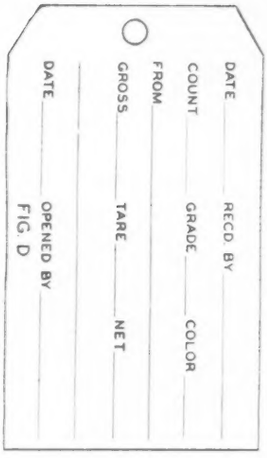


FIG. D

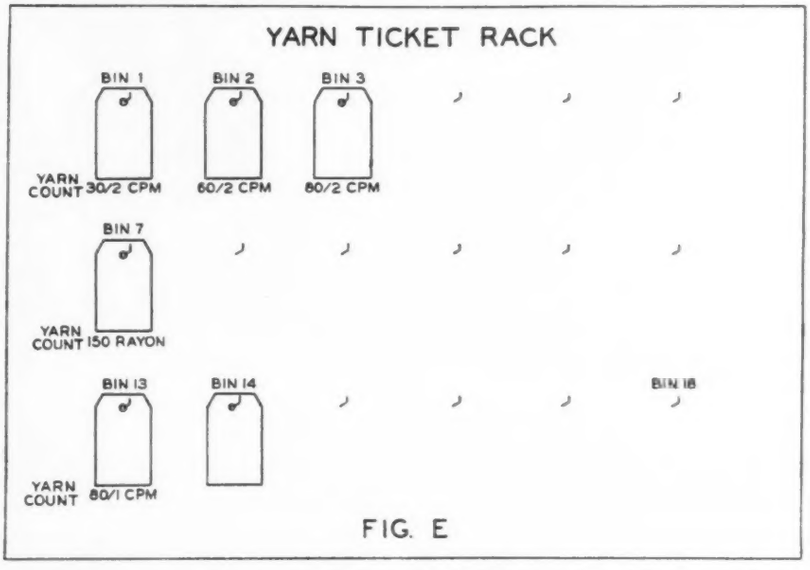


FIG. E

Figure *D* is an unopened case yarn record ticket. This ticket is also in duplicate form to be filled out for each case when received and the original placed on the proper case to remain there until the case is opened. The duplicate is filed on a pin board, Fig.*E*, or other file for that particular count and grade of yarn as a stock signal until the case is opened. When the case is opened the original is removed from the case and the opening record completed on it, and the duplicate, then the original is sent to the purchasing agent for proper record. The duplicate may be disposed of after it has served its purpose.

For sizing, a yarn reel and grain scale are all that is needed. Ten reelings of 120 yards each representative of each shipment should be sufficient to determine whether further tests are necessary. Color matching and fastness tests should receive attention when checking the size.

It is important that all checking and testing receive as prompt attention as possible after receipt of shipment to avoid the inconveniences and expense that would follow, if delayed, especially if the shipment did not come up to standard and was required for use immediately after testing.

CONTRIBUTOR No. 6132.

Machines Per Fixer on Ladies' Seamless Hosiery.

Also, figures on waste percentage and needle breakage on rayon goods . . . . . .

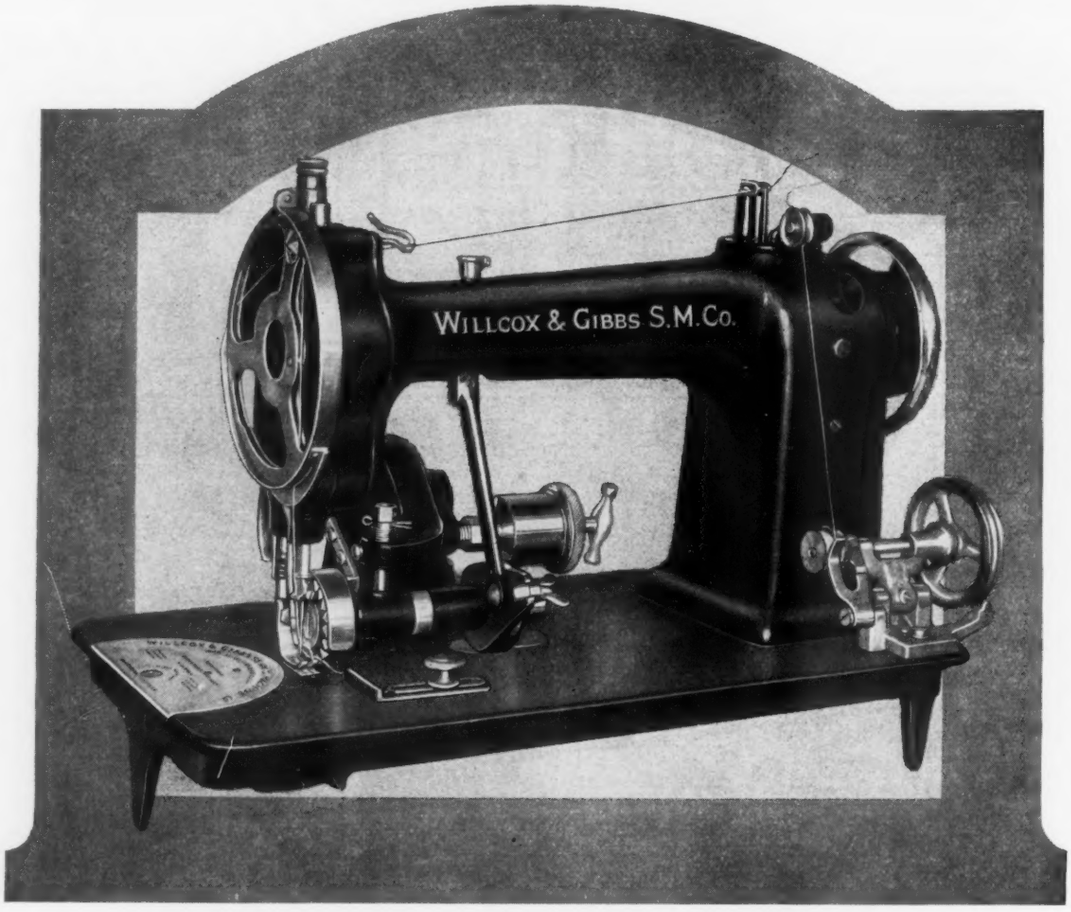
EDITOR COTTON:

I am answering "CONTRIBUTOR No. 6301" who desires information as to the number of seamless machines which one fixer should be capable of handling so that the best results can be obtained. He desires this information, mainly, on 260-needle machines, 54-gauge, 3½-inch cylinders, on ladies' 150 denier rayon goods, string work.

The writer has under his supervision several hundred Scott and Williams Model K machines which I believe is the type of machine to which the contributor refers. One-third of these machines are of the same needle, gauge, and diameter as those mentioned in his question.

The question of how many of these machines one fixer can handle properly has been discussed *pro* and *con*, and our experience from the standpoint of results shows that one fixer can handle 48 of these machines,

THE WORLD'S FINEST SEWING MACHINES



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HIGH-SPEED LOCKSTITCH

PINKING & SEAMING MACHINE

TYPE 26

NRA MEMBER U.S. WE DO OUR PART

This machine produces in one operation a combined pinking and seaming effect. The pinked seam is a flat, finished seam that has no bulk and will not fray. In the production of clothing, the pinked seam as produced on this machine is a vast improvement over that now secured, in quality of work, speed and cost of operation and in the appearance of the garment after it is pressed.

OPERATES AT A SPEED OF 4,000 STITCHES PER MINUTE

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SEWING MACHINE COMPANY

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HOME OFFICES

656-658 BROADWAY, NEW YORK, N. Y.

New Willcox & Gibbs Machines and genuine Parts may be purchased only from company's offices

keep his waste down and get production out.

It must be taken into consideration that rayon is not silk, therefore a larger percentage of imperfects must be expected as compared with silk. This larger percentage of imperfects would of course depend upon the mechanical condition of the machine, quality of the rayon being used, the experience of the fixer, the operator, and the speed of the machines.

Many fixers make a mistake by having the same tension on rayon that they use on silk. This, according to my experience, is bad practice for the simple reason that rayon will not stand the pull resulting from this tension. This tension should be applied on rayon so that its pull is less than silk, resulting in its feeding into the needles without causing cut-outs and pull-outs.

The quality of rayon used of course has a direct bearing on these results and it pays to buy good quality when buying yarns of this type, rather than to save a cent a pound and buy a cheaper grade.

We are using Scott & Williams Model K machines. Our chains have a total of 147 links for size 9½. Each set consists of 16 machines per operator. The machines are run at a speed of 225 revolutions per minute, on an 8-hour day basis. On this basis our production per set of 16 machines averages 30 dozen per day. The waste percentage on this production averages 8 per cent. The speed of the machines controls the needles used per dozen. Our figures show one needle per dozen.

CONTRIBUTOR No. 6309.

The Parts of Standard Machines

Standard Plate I—(Cont. from April issue)

The Yarn Eye Plate

EDITOR COTTON:

The chief function of the yarn eye plate is to keep the various yarns amply separated to avoid tangling during the knitting operations. Tangled yarns on circular machines very often cause waste or seconds and at times may break the hooks off of every needle in the machine. Such occurrences are costly, frequently without due consideration the knitter is held responsible for such troubles or they are simply accepted as accidents. The Standard yarn eye plate is well designed to prevent yarn tangling troubles, having seven spaces all equipped with porcelain eyes, including a long porcelain tube for the heel and toe yarns. The fixer's job is to plan an efficient yarn threading lay-out for the different styles, have every machine on a given style threaded exactly alike and impress on the knitter the importance of keeping it just so.

When porcelain eyes break or fall out, replace them immediately. Don't run yarns through an eye plate hole without a porcelain eye, especially silk, rayon or fine singles cotton. One day's waste or seconds will pay for dozens of porcelain eyes. Porcelain eyes can be replaced easily and quickly with a small alcohol torch and a piece of stick shellac. We have also been using for the past six months a new preparation called liquid solder for replacing porcelain eyes, and we find it very satisfactory. This preparation is also useful for re-tipping ribber stop motion sweeps, various guides on cone and bobbin winders, and many other similar repair jobs about the mill.

The Swing Piece

We often hear folks talking about their cars, planes, race-horses or homes being endowed with that much sought-after It, that certain something that puts them head and shoulders above everything else. Standard machines have It in the form of simple design, sturdy construction and few adjustments to get out of order. All three of these important features are easily recognized in the assembled swing piece. A simple adjustment which permits raising or lowering of the swing piece is provided by the eccentric K-1338 located at the extreme front of the piece. On the swing piece we find the detention fingers K-788, yarn fingers 1, 2, 3, 4, 5, the latch ring, yarn clamp and cutter assembly and other necessary parts.

First we will consider the yarn fingers. Four yarn fingers, 2, 3, 4, and 5, are pivoted on the pin K-639, and the No. 1 finger (double sole) is pivoted on the stud C-708. The fingers are not pushed or pulled down by springs as on some types of knitting machines but are rocked up and down by the gear levers K-789, which are pivoted on the pin K-639. Broken finger springs and the troubles which go with them are unknown on these machines. The rocking movement is secured from a series of teeth in the gear levers which mesh into like teeth in the back of the fingers causing them to move up and down when the gear levers are moved back and forth by other controlling mechanism. When the yarn fingers are either up or down they are held firmly in position by the detention fingers K-788. The detention fingers as shown on Plate 1 are held down by springs K-692, the front end of the detention finger resting in a series of teeth in the top of the yarn finger. This method of controlling yarn changing finger movement is simple and positive. Yarn changing troubles which cause broken needles, seconds or waste and other damage which can be caused directly or indirectly by the yarn fingers are practically unknown on the H machines.

It is not my intention to leave the impression that yarn fingers, detention fingers or gear levers will operate perfectly forever and a day without any attention. Note on page 1 of the catalog where it says Do Not Oil—the arrow pointing to the detention fingers. Now, *why* did the machine builder suggest that? First, because of the small amount of motion at this point by the detention fingers and the upper part of the yarn fingers, and secondly, because continuous lubrication at this point would soon cause deposits of hardened oil and grit to form between the respective fingers which would make them bind against each other and give trouble.

While we are on the subject of yarn fingers, how often does the average fixer remove them, inspect and re-polish the holes through which the yarns run? In many cases this simple yet very profitable

task is left undone until a machine begins to make an excessive amount of waste; then that particular machine is gone over and the fixer waits for the next machine to give trouble. Why not go over certain sets or rows of machines at a given time, record the date, then stick to your schedule? Miles of silk, rayon or cotton are running through the finger holes every day, and cutting into profits, unless fingers are being re-polished regularly. Using porcelain eyes in the leg fingers especially will help eliminate much of this trouble. Occasionally teeth will break out in the gear levers through accident or abuse; the levers can be replaced easily. A few drops of oil on the double sole finger stud C-708 will save a lot of work and worry.

The Latch Ring

Next we will consider the latch ring, which is noted for its simplicity, ruggedness and simple manner of adjustment. It is a complete ring of hardened steel entirely free from screw holes, cracks where metals adjoin or projections of any kind on the inner surfaces. Therefore needle hooks or latches will not hang, become bent or broken or cause dropped stitches during the knitting operations.

If the ring should get rough at any point from contact with needle hooks or latches it can be removed and re-polished very easily. An outstanding feature of the Standard latch ring is that it can be centralized with the needle circle without moving or re-adjusting any other part of the swing piece. Simply loosen the adjusting plate screws K-867, the eccentric screw K-1019, and spot the ring exactly where you want it.

Another very desirable feature is that the latch ring can be raised or lowered by placing or removing steel shims of different thicknesses under the latch ring screws K-746 and K-747. A simple and positive method of engaging the yarn when the knitting begins for transferred half-hose or similar numbers is also provided.

The latch ring being pivoted on the screw K-746, is moved forward toward the needles by lever action and is held in this position until the first few needles take the yarn. The latch ring is then released and pulled back to its normal position by the spring K-978. Re-polish the portion of the latch ring immediately in front of the yarn fingers when it becomes cut by yarns being drawn down by the needles. Regardless of what kind of yarns or combinations of yarns are being used, keep the latch set up so the yarn will run high in the needle hooks. In making rayon plaited half-hose or other similar numbers, use the No. 2 finger for the singles cotton back yarn and the No. 4 finger for the rayon face yarn. This will insure better plaiting and better control of both yarns in yarn changing than by running both yarns in one finger. Polish the upper and lower part of the hole in the No. 3 finger well so as to reduce the amount of pull necessary on the take-up spring while knitting the heel and toe. Make sure that the thumb nut on the yarn eye plate stud will stay in position so the tension on the leg yarn does not vary. Instruct the knitters to clean out lint from in between the tension discs especially when cotton leg yarns are being used. This will help to keep better sizes and reduce complaints of poor fitting from the boarding department. The hosiery buyer wants his goods to fit, regardless of the price he pays.

In the next article we will consider the parts shown on Plate 2-2A and Plate 3 of the Standard catalog.

MARTIN A. SHAW.

Left-Hand and Right-Hand Looping

EDITOR COTTON:

In answer to the inquiry as to the comparative advantages and disadvantages of left- and right-handed looping.

What is meant by left-handed looping is that the operative holds the stocking with the left hand to start it on the machine and loops toward the location of the dial. As a rule the last corner is the harder to put on accurately and to a left-hand looper the last corner is the right-hand corner which she turns with her right hand, while the last corner, to a right-hand looper, is the left corner which she turns with her left hand.

The advantages claimed for the left-hand looping are two: namely, first, running on the work contrari-wise to the rotation of the dial meeting the points as they rotate toward the hand and, second, turning the last corner with the right fingers. This is merely theory which does not work out in practice. I have seen a few good left-hand loopers while I have seen hundreds of good right-hand loopers. As a rule left-hand loopers require more or longer looper clips which is extra waste. It is usually hand looping rather than finger looping. The girl wants enough clip to get a hand-hold instead of the ends of her finger and thumb. This was permissible extravagance in the old days with cheap carded yarns on cheap cotton hosiery, but with higher cost material such waste is not permissible.

It is a known fact that most people are naturally right-handed and the fingers of the right hand are more nimble and flexible for delicate work than the left, and I can't see the advantage of putting on 298 to 348 stitches in an awkward way to gain some questionable advantage on the last two stitches.

In looping full-fashioned goods the right-hand method is used almost exclusively. We had a few left-hand loopers on seamless work who changed over when they went on full-fashioned. It is much easier to start a heel tab from the right side in the outside selvage than it would be from the left side, in the inside selvage. In fact, the latter method would be too difficult to be practical.

I had never heard of left-handed looping for the first several years of my mill experience, then I moved to a location where it was used extensively, but I never could get any satisfactory explanation for the method. I am inclined to think that some smart left-handed girl took up left-handed looping as the most natural method for her and made such a success of it that the boss had her teach all the

A CANDLE

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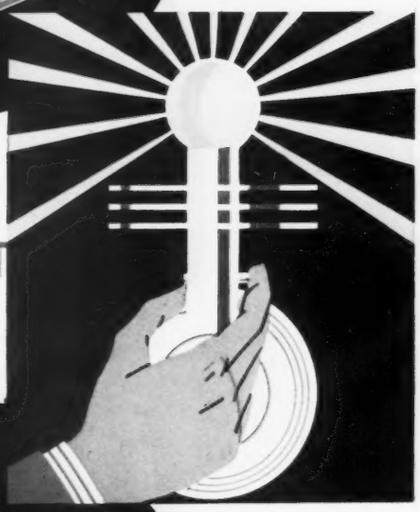
today's way



WALL BRACKET

AND A TORRINGTON NEEDLE

That reassuring uniformity of Torrington needles is due to their *machine manufacture.*

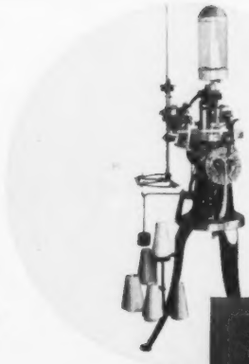
Like most other objects in daily use, Torringtons have progressed from the handmade stage. Like lights, for example.

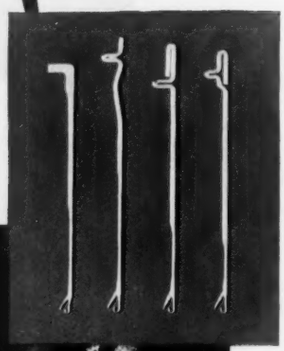
"Lights" once upon a time were candles . . . rolled by hand out of tallow that had to be rendered by hand! They were adequate for the time being, but progress did away with candles, and now our "lights" are intricate, sensitive "machine made" objects . . . switched on with a touch of the finger . . . giving steady, dependable light.

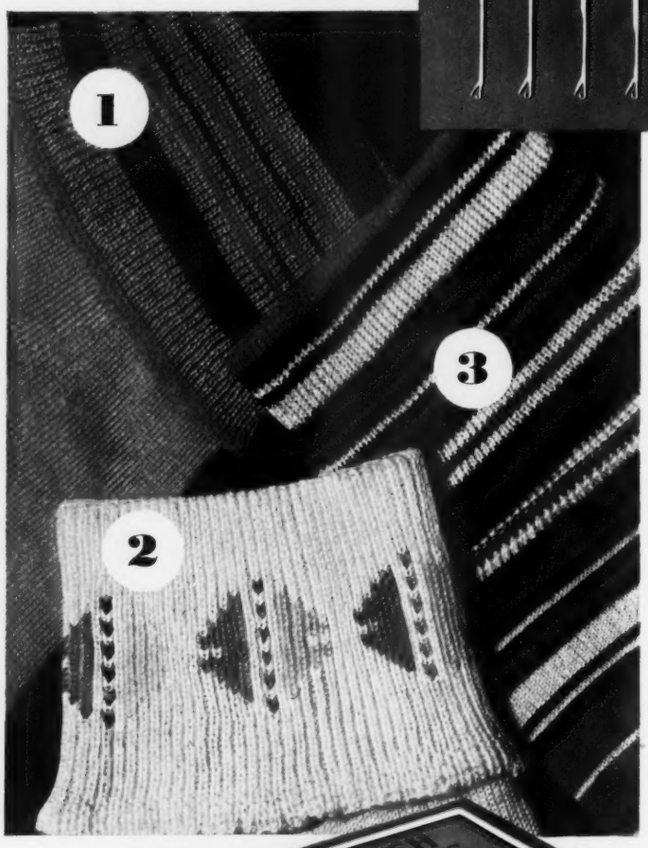
Steady, dependable *service* is what you get from mechanically made Torrington needles.

TORRINGTON *SPRING BEARD* NEEDLES

Fine Fabrics







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right-handed girls the left-handed method. There is only one place where I have ever seen any advantage to it and that was two girls on one machine with the right-handed girl putting on the back side of the stocking and the left-handed girl putting on the front side.

If anyone knows of any other advantages to left-handed looping that I have overlooked all these years I would like to have him point it out to me so that I will cease to have the feeling when I see it that I do toward the child that has crossed his shoes.

CONTRIBUTOR No. 6280.

EDITOR COTTON:

With reference to the inquiry on the advantages and disadvantages of left- and right-handed looping. As far as the finished product is concerned, there is of course no way of telling whether the job was done by a right-handed or a left-handed looper.

As far as the quality of the work is concerned, there is no difference. With reference to speed, however, some have said there will be more production by a left-hand looper than by a right-hand looper of equal ability. Personally, I question this, inasmuch as a right-handed looper's machine can be speeded to make up the difference in space left between the stockings.

To my mind it narrows down to this point: That a left-handed looper can put work on the points closer together than a right-handed looper because she begins at the very edge of the preceding stocking. On the other hand, the right-handed looper must gauge this distance and is bound to have some variation and a little extra space between the stocking. Therefore, if the right-handed looper leaves much space, in order for her to produce as much as the left-handed looper, the looper must be run just a little bit faster.

Thus, the only advantage of the left-hand looper is the thread saved in the intervening spaces between the stockings. We have found that a good right-handed looper can produce as much as a good left-handed looper, and has, for all practical purposes, very little space between the stockings.

After all, I am wondering if it makes a great deal of difference whether there is any advantage or not, inasmuch as a woman who is left-handed is going to be a left-handed looper and a woman who is right-handed, a right-handed looper. Nevertheless, if this will be of any advantage to anybody, then the effort is not wasted.

CONTRIBUTOR No. 6281.

EDITOR COTTON:

In the matter of the advantages and disadvantages of right- and left-handed looping, I am somewhat like the old republican in his answer to his son regarding democrats, which ran something to the effect that the Lord had made democrats for the same reason that He made snakes, snails, frogs, fleas, lice, etc., but the Lord himself only knew the reason.

Now I know that some mill managers make left-handed loopers, and they undoubtedly have a reason for doing so, but so far as I am concerned, the Lord only knows their reason, for I do not. I have been in a few looping rooms where they had a uniform system of left-handed looping. In each instance I found that the average production was much lower on left-handed looping than right-handed looping. In fact, I have never seen a left-handed looper who could do as much work as a right-handed looper.

We have always systematically trained our loopers 100 per cent right-handed, which with a great majority of human beings is the natural inclination. I have seen a few ambidextrous girls who would run on the back side of the stocking left-handed and the front side right-handed, in other words, looping in circles and doing highly satisfactory work. However, I think it would be a very foolish system to try to install, and one would meet with much resistance from his employees in trying to establish such a system.

But we have found the system of placing our girls on the left-hand side of the machine and teaching them to loop right-handed as the most thoroughly satisfactory. If we occasionally employ a girl who is naturally left-handed and wants to exercise her natural inclinations we do not try to force her in the right-handed looping, but we have found that such girls in our plant usually turn out to be right-handed loopers.

I might say in this connection that our looping and seaming departments are equipped throughout with correct posture chairs which have been adjusted to the most comfortable position of each individual operator on a theoretical basis. And each operator has been instructed to sit off of the end of her spinal column rather than on it. They have also been instructed that the plain wooden bottom chair is more comfortable when they once become accustomed to it than a cushioned bottom. Yet 95 per cent of our employees insist on equipping their chairs with cushions, which they make at home, decorate, initial, etc., and use continuously. And about 5 per cent of our employees insist on sitting in the chair rolled up like a ball rather than in the correct position. We know that the 5 per cent who sit incorrectly are dangerously wrong in their peculiarities. And we know that the 95 per cent who insist on having the cushions in their chairs would be much more comfortable, especially in hot weather, if they would throw the cushions away. But as long as our employees do satisfactory work in both quality and quantity we are not going to disturb their peace of mind by compelling them to do what we believe is the best thing to do, when it would only disturb their peace of mind and accomplish nothing more.

So I feel that there is about the same importance to be attached to the question of right-handed and left-handed loopers as there is to whether a girl should have a cushion or should not have a cushion in her chair, or whether she should sit in the chair in a circle or in the correct position. My thought is to let them have their own way, even though you do not agree with their way, so long as it makes no material difference so far as the general discipline of the plant, the quality and quantity of work are

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concerned. We just believe that those who line up co-operatively will do more work with greater ease and less fatigue. And in the same way we believe that a right-handed looper will do more than a left-handed looper, and that is about all we can say to the question.

CONTRIBUTOR NO. 6282.

Hosiery Scouring and Dyeing Problems

EDITOR COTTON:

The question concerning the scouring and union dyeing of rayon and cotton combinations of hosiery, as put forward by "CONTRIBUTOR NO. 6130," is peculiarly interesting because of the great multiplicity of ideas and diversities of opinion on the subject.

The relative merits of the one bath versus the two bath method of processing rayon hose is in itself quite a controversial question. It is positive that rayon and cotton combinations can be boiled off and dyed in one bath, with good results, for it is being done every day in a number of plants. On the other hand, many of the numerous adherents to the two-bath procedure have extensively tried and then abandoned the shorter method. The one bath process requires that adequate scouring agents be used, for fast level dyeing cannot be obtained on hosiery where the rayon oil is only partially removed or where it remains in a free uncombined state in the bath. Since soda ash, trisodium phosphate, or other alkali is often used in scouring, it is necessary that dyestuffs be selected which will perform in the alkaline bath. In swapping to the one bath method most dyers encounter some unevenness either in shade or in the union. One common source of uneven dyeing in the one bath method is found in the "too soon" addition of dyestuffs to the bath. Where the two bath process is used, the goods are naturally thoroughly wet out in the first or boil off bath, and the dye may be freely added. In the one bath method, the goods should be run in the bath (with the alkali and scouring agents in) for several minutes before the dye is added. After the dye is added the water should be slowly brought to the proper dyeing temperature. With simple precautions good results can be usually obtained in the one bath, though many consider the longer method to offer more positive uniformity of results and less seconds and redyes.

(What kind of rayon is used?)

To provide positive statistics concerning the consumption of the different synthetic fibers for rayon and cotton hose combinations it would be necessary to have access to manufacturer's files. Viscose is probably the most heavily used fiber and is found in both the half-hose and ladies' hose combinations. Nitrocellulose fibers are found extensively in the ladies' hose. However, it is used in both types, as are no doubt the acetate and cuprammonium yarns.

(What amount of oil must be removed from the rayon in scouring?)

Some rayons will contain as high as 8 to 10 per cent oil, perhaps more; and 6 per cent is common. To obtain best results in dyeing, and to prevent the development of trouble later, it is necessary that all

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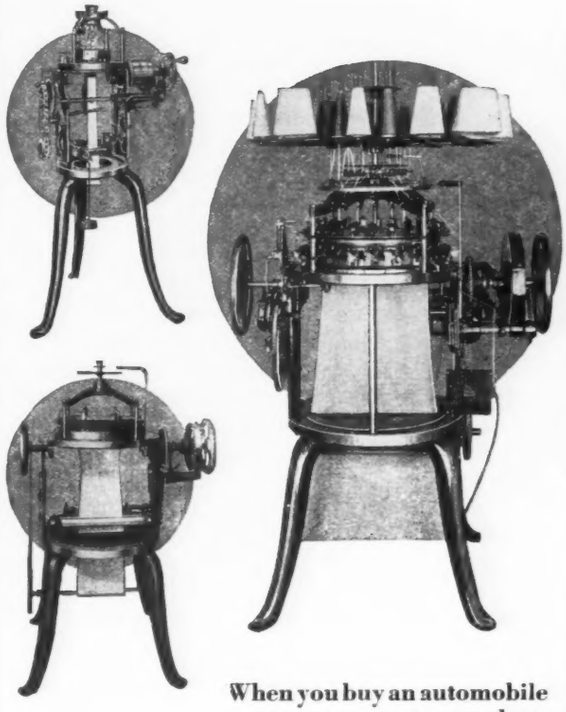

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of the oil be removed.

(Are welts, heels, toes and double soles mercerized or unmercerized cotton?)

In general, mercerized cotton is used for the top, heel and toe of the better grades of rayon and cotton hosiery; while the low priced hosiery manufacturer must often of necessity use plain combed or carded cotton yarns. However, there is no hard and fast rule to this effect.

(Is your supply of water soft, variable, or hard? Is a water softener used?)

Soft water is considered an essential in the textile dye plant. Speaking arbitrarily, a water might be said to be of average softness if it contained 4 grains or less of hardness per gallon. Occasionally raw water supplies will be found which run as low as 1 grain of hardness per gallon. A water softener is probably an economic necessity in the mill with hard water. With average soft water the use of a little soda ash or trisodium phosphate in the scouring and softening bath will prevent the formation of insoluble lime or magnesium soaps.

(What is the best scouring combination? Do you use a penetrating oil?)

For scouring rayon or hose containing rayon, good results can be obtained by using 5 to 7 per cent of a good grade of solvent oil or soap, and 2 per cent of mild alkali. Some mills use both soap and solvent or penetrating oil; say 4 per cent of soap, 2 per cent of oil, and 1 to 2 per cent of soda ash. Sodium oleate soap and pine oil is a good combination for scouring rayon. Where the one bath method is used, the solvent oil acts as both a scouring aid and a dyestuff penetrant. In the two bath method, about 1 per cent of a good penetrant is recommended for the dyebath.

(How many baths are used? What temperatures, how long, etc.?)

A typical run of the one bath method, as used in one mill, would include the following steps:

1. Add 2% soda ash or other mild alkali to bath, and bring to 110 deg. F.
2. Add 5% scouring agent (soap or solvent oil).
3. Add goods and run at 110 - 120 deg. F. for 10 minutes (this is to thoroughly wet out the goods.)
4. Add dyestuff, dissolved in water.
5. Bring bath slowly to boil, and run at 210 - 212 degrees for 30 minutes.
6. Add salt and run for ten minutes longer at the boil.
7. Take sample, and if alright, drop the bath and rinse twice. The second rinse water is held for entering next lot. (If the sample is not just right, further procedure is of course determined by the needs of the sample.)

This is of course an average formula and might require some modification for individual use. If the goods lack the desired "feel", or do not have the required luster, use 1 to 2 per cent of sulphonated castor oil in the last rinse and run at 110 - 120 deg. F. for about 10 minutes.

(What dyestuffs are used for matching a color?)

Most of the shades for the present season (for rayon and cotton combinations) can be obtained from four basic colors: Brown, Black, Red, and Yellow. It will be necessary to select dyestuffs which will give a good union, and a black which will give the necessary grays. CONTRIBUTOR No. 6194.

Analyzing Full-Fashioned Operations

EDITOR COTTON:

In his question recently published, "CONTRIBUTOR No. 6301", among other things, asked for mill information as to the time necessary for yarn changes, welt turning, etc., in manufacturing full-fashioned hosiery. This question is one that requires considerable investigation to answer absolutely correctly, but I am giving you below an average time study for a stocking similar to his. He stated his conditions as being a four-thread stocking with 1,448 courses to the looper lines in heel tabs, two white stripes in welts, three picots, 35 narrowings in leg (8 below welt, 27 at calf) and 4 narrowings in heel tab—on a 24-section Reading legger with high speed of 60 courses per minute. I offer the following time study giving a breakdown of the time necessary for the various operations, and believe that it will be essentially correct for this contributor's conditions:

Set Up Welt Bar, Lay Yarn, Adjust Machine	3.60	Minutes
Knit Inside Welt	2.00	"
Picots & Stripes	1.20	"
Knit Outside Welt	2.00	"
Turn Welt	7.00	"
Knit Leg to High Splicing	19.00	"
Adjust Machine for Splicing Yarn	.03	"
Knit High Splicing	2.80	"
Adjust Machine for Heel	.03	"
Knit Heel	2.30	"
Press Off & Collect	1.50	"
Average Time Lost	1.30	"
TOTAL	42.76	Minutes

This man also wanted to know the production in eight hours under the conditions he laid down as repeated above. It must be realized that production on full-fashioned leggers on the same number will vary in accordance with local conditions. By this I mean a lot depends on the training of the knitters as far as being taught to keep their frictions in good condition, their machines clean, carefulness in turning welts, making yarn changes, etc., are concerned.

For instance, the fact that our knitter, in the time-study table given, required seven minutes to turn 24 welts, does not mean that this is a criterion. Some operators turn welts much faster, but break needles, which probably will not be seen until part of the leg has been knitted, and then the machine has to be stopped, a new needle inserted, and the stitches picked up. One can readily see that this consumes a considerable amount of time and will naturally retard production, even though the knitter may have the reputation of turning welts quickly.

The data which I have given are based on one operator per machine. By this we mean that the knitter on the "facing" machine did not help in any of the operations for making the stocking while the time study was in progress. I mention this in order to impress the fact that if there is co-operation between knitters in the same aisle, the time per set can be cut considerably, which means greater efficiency in the mill and more money for the operators.

CONTRIBUTOR No. 6302.

THE KNIT GOODS MARKETS . .

PRICES for women's silk full-fashioned hosiery appeared to have reached the low down by the middle of April, judging from trustworthy reports of transactions in the New York and Philadelphia markets. Philadelphia in particular seemed to be for several weeks a testing ground where buyers and sellers were engaged in their final struggle for the current season.

In hosiery, as well as in various textile lines, the prediction was made by persons recognized as leaders in their respective lines that April would prove to be the crucial month in the marketing of Spring and Summer lines. Some professed to believe that the agony prevailing in April would continue well into May, depending upon the news from Washington as to the progress of and final outcome of pending legislation having to do with the control of industry.

It was commented that absolutely all of the basic raw materials and semi-finished products in the manufacture of textile goods were dragging bottom as to values. For example, silk dropped to a level where it seemed there would be no further recession. Synthetic yarns were equally low, relatively, notwithstanding the demand upon them for substituting for silk and for use in connection with cotton. Cotton yarns wobbled on absence of demand in consonance with an unsettled market for raw cotton, and wool, which had been easing for several weeks, was still, apparently, on the decline late in April.

It was common comment that business in textiles had suffered a post-Easter slump, and this appeared to be true, even as to hosiery, the more active item in silk, rayon, and cotton manufactures. There was no serious slump in demand for hosiery, but it was apparent there was too much of it available for meeting that demand in orderly fashion. However, with authenticated sales of four thread 42-gauge at $5 a dozen for standard construction, it appeared to both buyers and sellers that the price bottom must have been reached. The $5 price was used by some manufacturers buying in the gray as their basis of a maximum.

One concern which supplies silk to a manufacturer and takes the production in the gray limited its offer to $2.80 a dozen, this covering every item of cost in the gray exclusive of the yarn. Some buyers said they thought this was in line with the prices they were paying for gray goods to mills which financed their own silk purchases. This, however, was a matter of wide dispute, the lowest price reported on acceptable authority for gray goods being $4.85 for 42-gauge four-thread silk, this comparing with $3.85 paid to one manufacturer for thirty-nine gauge in the gray. These transactions were variously viewed as absolutely establishing a level below which it would not be safe for any producer to undertake to fill orders. In fact, some manufacturers insisted that the $3.85 price and the $4.35 price were less than actual cost for mills in the Philadelphia and Reading areas.

It appeared from the prices for presumably good lines of hosiery that some of the department stores and women's specialty shops were oversupplied and were getting out from under in advance of a traditionally dull Summer period, some leading stores making a cleanup of 48- and 45-gauge at 69 cents for jacquard lace and/or picot top in varying weights from three thread to five thread. The lowest price noted in any store was $1.00 for three pairs of what were described as seconds of pure silk.

It was a complaint among some of the distributors to large retailers that competition was so keen in unbranded lines that there was little opportunity to do business profitably and, therefore, retailers were said to be turning toward branded lines, since apparently good numbers are offered at prices which made $1 a pair profitable for retailers. Such a stocking was quoted $6.75 a dozen by a manufacturer, for four thread 45-gauge. This line was brought out about the middle of April. Simultaneously a branded number from another mill, extensively advertised, was exploited in several department stores.

Notwithstanding February comprised three working days less than January, there was an indicated increase of approximately 25 per cent in the production of hosiery as a general commodity. This should not be regarded as surprising, inasmuch as it was believed there would be a fair demand for full fashioned hosiery for the Easter trade and, it was felt, in addition, that by reason of slow markets preceding the year-end holidays, there would be considerable demand for hosiery for the promotion of sales which were expected to be, but were not, staged in January. So, the hosiery industry went ahead pell-mell, a reflex of which was surplus stock and low prices during March.

It since has been revealed that there was no extensive department store preparation for Easter selling and that, as a general proposition, hosiery was not in so great a movement as ordinarily for this annual Spring starter. This conclusion forced a further conclusion that a more active market was to be expected for the succeeding months preliminary to the usual Summer curtailment, necessarily encouraging a speeding up of many of the mills, particularly among a group which sells in the gray to other manufacturers and to jobbers.

It was estimated by a Philadelphia mill executive who, for some time, has been selling 45-gauge in the gray, that 20 per cent of the smaller establishments are following this practice. It is pointed to as all right when the gray goods are sold to manufacturers who are interested in maintaining prices but that it is dangerous when the goods are consigned to mills and to jobbers engaging in price competition, being influenced by clever buyers for large retailing establishments.

A Philadelphia firm which claims to be operating four small plants in that city and reports the production of these plants sold up for May, states that gray goods shipped to New York are dyed and finished and boxed for 65 cents per dozen. This, coupled with statements by jobbers that they are buying 39-gauge hosiery with cotton hem and cotton soles for $4.00 per dozen in the gray, accounts for the fact that, as has been reliably reported, hosiery of this description has been available to retailers at $5 per dozen. This price recently was made to appear high by comparison, when it was widely recorded that a leading New York establishment having financial interests in several mills, accepted an order for a large quantity of hosiery for chain store distribution at $5.00 per dozen for 42-gauge of virtually standard construction.

It is hardly to be assumed that this establishment was engaged in the distribution of hosiery bought in the gray from other mills.

Sees Golden Belt as Southern Leader

A manufacturer commenting on the disparity in prices and the fact that it appears a considerable quantity of hosiery is being sold in violation of a Code provision, in that it is being let go for less than cost, said the hosiery trade, regardless of the language of Code and the extent to which it may be ignored or enforced, needs a leader. Until a year or two ago, he said, a large part of the industry looked upon the Berkshire Knitting Mills as the leader. "I am afraid the Berkshire has lost this prestige," said the manufacturer, who added, "it seems to me that the Golden Belt Manufacturing Company, Durham, N. C., is looked upon by some as the leader in the South, although there may be larger mills in that section. In the North, it seems that the leadership, if any, is divided between the Berkshire and the Apex, but a combined leadership does not seem to have been very helpful in maintaining a price structure."

Of course, it was pointed out, leading manufacturers may regard themselves as having been crowded out of leaderships, since they, in common with all of their competitors, are acting under regulations from Washington, although such regulations may have been formulated by representatives of the industry itself.

Production reports of hosiery manufacturers to the Department of Commerce for February, 1934, compared with February, 1933, would seem to indicate that the trend might not be toward lower prices, for output of women's seamless silk increased by 240 per cent while output of women's seamless cotton stockings declined around 43 per cent. Using the reports of identical manufacturers to the Department of Commerce, more than ten times as many dozens of women's full-fashioned cotton hosiery were produced in February, 1934, as in the corresponding month of 1933. There was an increase also in women's silk full fashioned hosiery, but the ratio was not as great as in seamless and in full fashioned cotton.

An unusual showing in the report for the two Februarys is that while there were produced 8,184 dozens of women's full-fashioned rayon-and-cotton combination in February this year, the output of identical mills for the corresponding month of 1933 was less than 100 dozens. There also was an increase of around 400 per cent in the production of women's seamless cotton and rayon in combination. The same combination was more popular in February this year than in February last year for men's seamless half hose and the classification boys', misses' and children's.

Making allowance for holidays, there were three more working days in January than in February, production of hosiery in February, all classes, still was increased by 25 per cent, which would seem to gibe with the fact that in March and April there was an apparent excess of stocks as measured by demand. Yet at the end of February there were unfilled orders for over 1,000,000 dozens more than the end of January, and stocks on hand were increased by only around 250,000 dozens.

The Situation as to "Ringless"

The introduction of so-called "ringless" hosiery appears to have been running ahead of the preparations by manufacturers for a systematic distribution; for example, it is doubted in the trade that hosiery made by the three-carrier process could be sold profitably for less than $1.00 per pair, for standard construction of all silk chiffon. Yet department stores have been advertising "Your choice of finest ringless chiffon" for $.79.

It seems unfortunate that the initial presentations of the shadowless stockings were not better controlled. This appears a more important view from the fact that numbers of leading manufacturers of long years of experience look for the so-called "ringless" to eventually predominate in retailing to the extent of probably 75 per cent. There is something so distinctive about the merit of hosiery from which the shadow effect has been eliminated that its future seems pretty well indicated. Anyone may produce a style, it is suggested, but style does not become a fashion until the consuming public has acted. Many of the innovations brought out as style features have a very short existence.

It is pointed out by some factors that control of the "Pointex" patent and distribution was not well managed; that the owners of the patent might have prolonged its life of usefulness. Commentators on the subject of the "Pointex" heel say the mistake was made in extending to jobbers a royalty privilege; that it was through this change of policy that price cutting became common.

Adverting to the suggestion that the initial presentation of the "ringless" stocking was not well managed, it is recalled that as long ago as the beginning of March it was pointed out that "patents about to be issued for inventions in the field of 'ringless' hosiery relate to the stocking fabric and the method of production." It was held at the time that the licensed manufacturers, before obtaining the full benefits of absolute control of the patent, would have to formulate a regulatory program. As an announcement to this effect seemed to be construed as an attempt at price fixing, in violation of the Sherman Act, yet assumed to be in accord with some of the proposed Code provisions, there was injected some additional confusion, and the "ringless" stocking has not enjoyed sales warranted by its freedom from blemishes which heretofore defied the efforts of the best manufacturers seeking their elimination.

In defense of the "shadowless" or "ringless", it is pointed out, where the stripes still appear, the fault may be charged to the manufacturer, while the runner, which it was sought to eliminate, in the "Kantrun" construction, often may be the fault of the wearer of the stocking.

The Lastex Half-Length Half Hose

Anklets for children and misses are promising of a very large sale during the Spring and Summer months. Mills have substantial commitments from jobbers and some of the jobbers seem to be more enthusiastic over the outlook for the socks than even some of the manufacturers. Children's hose are expected to have an unusual run in sports numbers with elastic tops. In fact, lastex seems to have taken a strong hold on short stockings. Some of the leading jobbers who have booked a fair amount of Spring business predict that 75 per cent of children's hose in ⅞ and ⅝ lengths will carry the lastex tops, and some would not be surprised if a fair proportion of the men's half hose of one-half the usual length also might prove very popular, particularly in the rural sections and among youthful urbanites either of, or aping, the collegian.

As the lastex top half length man's sock rises to only the lower part of the fleshy section of the leg, the presumption is that in service it will sag and the top may be seen hanging over the shoe top. Not very dressy, but quite swagger. "We are selling more of these to the country stores than to stores in the cities and larger towns," said a jobber, who observes that usually the rustics are among the first to try out anything radical in the way of an innovation. The jobber went on to say that his house had found it expedient to place repeat orders for the lastex top half length sock. "Of course," he went on, "the orders are not large, because, for one reason, we do not look for this fad to last any longer than the knee length stocking for women several years ago, which was bought heavily by some dealers when first the innovation made its appearance, as a forerunner of bare legs. Most of those who stocked up heavily had cause for regretting they had done so. We are not taking a long chance on half length half hose."

Machine Survey Shows South Increasing in Percentage of Full-Fashioned Equipment

Approximately 30 per cent of the hosiery manufactured in American mills in 1933 was of women's full-fashioned construction, according to a survey of the industry under the auspices of the Textile Machine Works, Reading. This quantity is exceeded by only one other classification, output of men's seamless being represented as about 32 per cent of the total production. Women's seamless rank third, with a showing of around 13 per cent. Next in the order of their rating by per cent are misses', infants', bundle goods, athletic and men's full-fashioned. The analysis is based on shipments of 100,000,000 dozen pairs, all classes.

The survey report is devoted mainly to statistics as to numbers of mills, and machines, dealing in this respect with Reading machines. Of the total production of Readings in 1933, approximately 62 per cent were of 45-gauge, this ratio in favor of 45- being increased in the first quarter of 1934 to more than 70 per cent. Gauge 51 represented 21 per cent of the total production in 1933 and approximately 15 per cent in the first three months of 1934, and 54 gauge less than two per cent. About 17 per cent of the 1933 production of Readings was of 42-gauge, and this gauge represented 10 per cent of the output for the first quarter of 1934. About five per cent was represented in 36- and 39-gauge. The increase for 51-gauge in 1933 over 1930 was around 20 per cent, as measured by sections, while a considerable decrease in sections per gauge is indicated in the 42-gauge division.

Shipments of Reading machines in 1933 to territory designated in a report of the survey as southern section increased by approximately 37 per cent over 1926, while in Pennsylvania there was a decline during that period of 35 per cent. The survey accounts for 322 full-fashioned hosiery mills in the United States, with a total of about 15,000 machines, more than 20 per cent of the mills being credited to southern states . The New York and New England fields have suffered quite a decline in number of mills since 1920, the report of the survey shows, while the Western and New Jersey divisions have about held their former place. Productive capacity by territory is shown in the following tables of number of machines and sections in place:

Southern states, 72 mills, 51,164 machine sections.

New England states, New York and New Jersey, 59 mills, 38,219 sections.

Western states, 26 mills, 39,451 sections.

Pennsylvania, 165 mills, 179,382 sections.

The survey of 1933, more comprehensive than any of the previous studies of the hosiery industry conducted by the Textile Machine Works, shows a considerable increase in use of silk in the manufacture of women's full-fashioned stockings in the latter part of 1933 and again in the first quarter of 1934. There is shown also a gain in rayon, and cotton and wool mixtures, but a decline in silk and cotton mixture, the drop being pronounced in the later months, when silk was at its lowest price in some time.

The price of silk is shown as having declined from around $5 a pound in 1930 to approximately $1.50 in the first quarter of 1934, comparison being made on XX 83 per cent white, 13/15 denier. Monthly deliveries to mills averaged 51,000 bales in 1930, and 38,000 in 1933, the aggregate deliveries to U. S. mills in the four years amounting to 62,447,000 bales.

Exports of women's full fashioned stockings are represented in the report of the survey as aggregating 241,145 dozens in 1933, valued at $1,392,978, an average invoice price of $5.77 a dozen. Analyses covering production and exports of hosiery are based on statistical information compiled by the Department of Commerce from reports of manufacturers.

While there have been no remarkable strides in installations in the past fifteen months, it would appear from trustworthy statements in the trade that the bulk of the new equipment set up in full fashioned mills in 1933 was of 45-gauge, as well adapted to the manufacture of "ringless" hosiery in chiffon construction. There is, however, a growing tendency to finer gauge, notably 51-, but manufacturers are somewhat hesitant about undertaking to expand the field of the higher priced numbers.

There has been no departure from the general indication that the popular priced numbers are in far greater demand than either those which would have to retail for more than $1.00 a pair and those which are made for a minimum price. This leaves 42-gauge machines as still popular and sufficiently flexible for meeting changing trends in construction and weight of fabric.

To some manufacturers it appears that production of 39-gauge stockings is becoming too costly for successful competition with 42-gauge and finer. The point is made that there are only a comparatively few of the more modern machines of 39-gauge, those of more than twenty-section frames being very rare, it is said, and these not of the high speed construction.

Many of the 42-gauge machines have longer frames and more speedy production, so that the gap between the actual cost of 39- and 42- is narrowing to the extent that it would appear 42- very soon will have the monopoly of production for the lower brackets. Especially, it is maintained, 39-gauge probably would be out of the running were production control in effect.

Manufacturers discussing the question of competition from the standpoint of gauge maintain that the operators of 39-gauge machines are in a favorable position to compete with finer if they do not write off anything for depreciation or obsolescence, this having been taken care of in the case of the older machines. On the other hand, if they were to write off depreciation, as they probably would be required under enforcement of a production control code, their cost would be so high as to leave them unfavorably situated for competing. This assumes, however, that universal cost finding would apply under a fair trade practice code.

Coarser Gauges Sold in Gray

In the present market situation, it is pointed out, owners of the coarser gauge machines should have no difficulty in selling hosiery in the gray to manufacturers operating forty-five gauge and finer, as the latter are in an advantageous position for distributing the lower priced stockings so long as they can buy them in the gray, whereas they could not well afford to install even ancient models of machines, at relatively low cost, in order to produce the goods in their own plants.

John P. Nissen, who for many years was sales manager for the Cadet Knitting Co. while the company was thriving at Second street and Allegheny avenue, Philadelphia, is reported "doing his part" in relieving manufacturers of stocks of hosiery in the gray and supplying those in need of such goods. In a quite recent formal announcement to the trade Mr. Nissen solicits available production and makes it known that he facilitates transfers by listing gray stocks. He operates his hosiery exchange on a commission basis and specializes in women's full-fashioned.

Mr. Nissen confirms statements of many manufacturers that the bulk of the demand is for price hosiery, and it would appear from his comment that 42-gauge seldom goes begging for an outlet, although there is good call for 39-gauge. While of 45- more is offered than can be disposed of advantageously to sellers, it is stated. He sells only to manufacturers, and has been having a fair volume of business with mills in the South. This would seem to gibe with opinions heard in the trade that numbers of southern manufacturers were having a more nearly wide-open market than many of their friendly rivals in the northern field, although farther from the larger markets.

Mr. Nissen is regarded by patrons as among the more favorably situated of all hosiery market factors, in that he simply locates supplies and places them, buying none on his own account, and therefore accumulates no stock; has no worries over cancellations or collections, and his service is sought by seller and buyer. Thus he functions much on the order of the Federal Reserve Bank system.

Commenting on a representation of Mr. Nissen that there was being offered more 45-gauge hosiery last month than could be readily placed, a manufacturer said he had

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Finishing Compound S. P.
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When "Brosco" Finishes are used, only "one bath" is needed.

Another point—because "Brosco" Finishes are fixed in the Fibres, they will withstand repeated washings.

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HOSIERY FINISHING BOARDS

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THAT WORK ABSOLUTELY SMOOTH

The famous bone-dry, unshrinkable, well finished boards that give universal satisfaction.

Especially recommended for silk and chiffon hosiery. Satisfied users the country over. A list of these users gladly furnished to any mill on request.

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reason for believing that to be true, and that at one time when prices were shaking over reports of several large sales at a shading of 25 cents a dozen, 4 offerings of 45-gauge were being accepted by a few manufacturers at the prices at which 42- of comparable construction were available, showing, he said, that it is not gauge so much as price that is the objective of buyers for the trade.

Suggested Cures for the Industry's Ills

Five executives of full fashioned hosiery manufacturing organizations prominent in the Philadelphia and Reading sections who were complaining of inadequate prices, were asked, as they happened to be encountered, what they would suggest as a remedy for the apparently very unsatisfactory condition of the market. Their answers were about as follows:—

1. Strict enforcement of a fair trade practice code.
2. A universal cost accounting system, the use of which being compulsory as to all manufacturers.
3. Open price exchange.
4. Standardization of production.
5. Production control.

While this appeared to have run the gamut, a sixth mill executive encountered gave as his remedy "the closing down of every factory for thirty days."

A subsequent analysis of the various suggested solutions for the problem which the hosiery trade is trying to solve, indicated that a universal cost accounting system probably would be little better than either of the systems employed by recognized expert accountants and experienced manufacturers. It was pointed out that probably no two manufacturers in a half dozen or more, selected indiscriminately, would arrive at the same finding, no matter how carefully they might have studied every phase of overhead. It is in the matter of overhead particularly where is found the greater disparity, and it is suggested the disparity will be greater henceforth, due to the fact that almost every manufacturer of average intelligence and business acumen is engaged in ascertaining the lowest overhead cost possible. This ignores the overhead mechanism.

It is pointed out, for example, that in boarding hosiery, alone, there may be a wide difference in cost, depending upon the speed of operating with the customary metal forms and depending upon whether these forms be used or the boarding be done by the automatic drying and stripping process. There is a disagreement among manufacturers as to which method is the more economical. That is a matter to be left to the manufacturers of the various boarding devices.

A fair trade practice code, it is logical to assume, would embrace all of the several suggested remedies, one of which, open price exchange, has been a subject of wide discussion in the hosiery and underwear trade, particularly, for a number of years. Several years ago, it will be recalled by numbers of southern manufacturers as well as many of their competitors in the North, Julian Armstrong drifted into Philadelphia from Chicago and won the ear of a number of hosierymen, with the result that a meeting was held and his proposed plan of operation was described in extenso and a few mill chiefs gave Mr. Armstrong their checks for $100 each as an initial payment for the privilege of participating in the exchange. It never was put into operation, for the reason that there was not sufficient cohesiveness among manufacturers apparently interested in its enforcement. Of course, as was pointed out, there was at that time no method for enforcing obedience to exchange regulations, whereas with such machinery in operation under the Code authority, enforcement would be easily possible since the Code would be liberally provided with teeth for making it 100 per cent effective, or exposing violations.

Is Production Standardization Possible?

Standardization of production would seem to be Utopian, but for the fact that style, details of which could not be foreseen, might call for very sudden changes in certain standards, as witness the time consumed in striving to establish distinctiveness for what for the last year has been subject to reference through trade publications as "ringless." Standards for so-called "ringless" hosiery appear to have not yet been so firmly established that manufacturers controlling what some believe are basic patents have gone ahead with production as enthusiastically as if there were no offerings of hosiery, described as "ringless", for prices which are regarded as impossible in the employment of the three-carrier device.

Is production control within the range of possibility, ex-

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The Enka pre-treating with a real gelatine throwing cream holds the twist. The throwing machinery runs steadier, loss of time in doffing is reduced and the operation is speeded up.

The 100 denier, 40 filament, put up on 1½ pound cones, tinted in two colors for right and reverse twist, is priced at 90¢ per pound for net weight of yarn.

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cept at the expense of manufacturers who aer in position, by reason of a better knowledge of the mechanics of hosiery manufacturing and marketing? Here again, it has been pointed out, changes in the character of hosiery for expanding a manufacturer's outlet might require a revision of control methods, with the result that production control might prove as distasteful and disadvantageous as frequent changes and modification of codes for regulating the hours of labor during varying periods.

Obviously, as one manufacturer "in heat of passion" suggested, padlocking of all hosiery industries for, say a month or more, would have the effect of perhaps better adapting stocks to effective demand, so that after all is said it would seem that through the NRA and sub-divisions, the manufacturers would simply be doing what might have been done in the absence of codes or provision for use of "the big stick."

It was regretted by one manufacturer who, in the last six months, has been very much in the news, that there is lack of confidence among manufacturers in their competitors. "There have been more rumors of low prices than actual underselling," he said, adding, "Manufacturers, when they hear that a competitor has quoted under the recognized market level, should make it a point to go manfully and unafraid to the manufacturer accused and ask him if it were true that he had reduced his price by, say, 25 cents per dozen. If we did this, we would find that usually there was no foundation for the report of a price cut. But," this manufacturer continued, "I recently had occasion to ask a manufacturer who was reported to have sold a large quantity of hosiery at a very low price whether it were true. He told me it was true. Then I knew what to do in my own mill management and what course to pursue among my friends in the trade who had not reduced their prices. We, as manufacturers, seem to have views as diversified as those of the general public on strictly political questions. Unfortunately, when we manufacturers vote, we do not get results conforming to those that the public gets from a vote of the electorate at large."

An apparently knotty problem discussed by hosiery manufacturers in the past few weeks had to do with a proposal for establishing two grades of hosiery by a way of standardization. In the absence of specific reports from members of the committee of manufacturers delegated to establish quality standards, it was impossible to obtain the basis for the two standards proposed, that is, number one and number two, or as some prefer, "A" and "B". The committee had for its guidance samples of hosiery knitted to certain specifications. As it was expected to submit its report at the annual convention of the National Association of Hosiery Manufacturers, mill managements were given ample time for speculation, and it was the concensus that standards would be based on a given number each of courses, gauge, and weight of fabric.

Manufacturers who usually do not comment on a proposal of this character in advance of having had it definitely laid before them, were free, in some instances, to predict that regardless of the number of grades for which specifications might be supplied, there would be established, in competition, numbers of standards, some in the direction of a better product for a higher price, but generally for a type of stocking intended for a lower price bracket. This assumes that the modification of the code bearing on standards would not bar manufacturers from deviating, provided they described their product in a way that would leave it not uncertain as to whether it was one of the two code standards. Some manufacturers believe that to designate certain standards would lead to competition in improvement of the stocking, rather than encourage competition in price.

It was observed in the trade that some confusion would be likely to arise with the establishing of given standards, in that it might be necessary to make changes in wage schedules for meeting demands of knitters.

Shorts in Light-Weight Underwear

Shorts and athletic shirts, as in recent years and as predicted for the current season, are the outstanding items in the distribution of men's light-weight underwear. While this type of "lingerie" for men is very active, the volume of business, as measured in dollars and cents, does not bulk heavy. So, while there is considerable movement of men's underwear, the returns are said to be inadequate in comparison with the sales cost. This is the complaint of jobbers. The manufacturer, it being assumed, is in a better position to maintain a margin as between cost and sales price.

The increasing popularity of shirts and shorts and light weights generally for all year wear is cutting deeper and deeper into the dollar business of distributors this year, by reason of a tendency toward economy in apparel that is not worn on the outside. Already dealers are said to be contemplating a more general use of summer weights for the 1934-35 Winter than in the season that has passed, according to some jobbers, who state that while retailers in recent years have not been conspicuous for placing advance orders, they probably will be slower in doing so this year.

The Heavyweight Situation

There has been taken a fair amount of business in men's heavyweights, but the bulk of the contracts is for what is described as popular price goods, embracing sub-standard numbers. The bulk of the business in the better type of men's heavyweight union suits and two piece garments remains to be placed, and may crowd some of the mills later in the year.

Recalling the severity of the latter part of the Winter recently ended, it is assumed jobbers and retailers generally made a complete cleanup of their stocks of men's heavies. The result of this will figure in the business that is to come for the following Winter.

Manufacturers of the tuck stitch snuggies for women are taking a good volume of business, and this type of garment is expected to have a strong run throughout the Summer and Fall. The increased use of cotton in women's underwear does not, however, add very much to the consumption of the national white fiber, as the garment diminishes in size from year to year and, ordinarily, is a very light fabric. A popular type is knitted of two parts of rayon to eight parts of cotton yarn, 26s single combed peeler being used quite extensively by some of the up-State Pennsylvania manufacturers.

Popularity of the very elastic tight fitting cotton garment has detracted in no little extent from the use of rayon, and in the opinion of some factors, the entering wedge has been driven for a much broader use of cotton in underwear for women.

Possibility of U. S. Flax Production and Utilization Being Studied

During recent months there has been a revival of interest in the subject of flax production, preparation and utilization in the United States. This country has no important linen industry, as such, although it is a very large user of flax and flax products, ranging from coarse twines to the finest damasks. Flax fiber is utilized for many other purposes, some of the more important being the manufacture of paper, apparel, towels, and handkerchief fabrics.

Because of this interest in flax, the Textile Foundation called a meeting in Washington, D. C., of leading chemists, paper and textile manufacturers, flax growers, technicians, government officials and others, who had had experience in different phases of flax with a view to obtaining their cooperation and advice.

As a result of the facts brought out at this meeting the Foundation has decided to launch a series of investigations and experiments ranging through the field of production, machine and chemical preparation, utilization in the manufacture of paper, and the production of linen fabrics on cotton mill machinery. If the production of flax in the United States proves successful, the farmer will have an added crop. The American grown flax will not interfere with cotton but may supplant some of the raw flax imported into the United States for manufacture into certain products.

H. H. Willis, in addition to his duties as dean of the textile school of Clemson College, Clemson College, S. C., will devote part of his time to correlating the different activities and seeing that they move forward with reasonable speed.

A limited amount of pedigreed flax seed has been obtained and arrangements made for its planting in different localities of the following states: Virginia, West Virginia, North Carolina, South Carolina, and Tennessee. Flax production by private enterprise in Georgia and South Carolina will be included in this study.

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COMBED OR CARDED

Peelers (any staple)
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Put up
Skeins
Warps
Tubes
Beams
Cones

Electrical Winding

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REVIEW OF THE YARN MARKET

Philadelphia, Pa., April 19th, 1934.

THE movement of cotton yarn to manufacturers through Philadelphia houses this month was in sharp contrast with that of the first quarter of the year. There were substantial bookings then and deliveries were in fair volume. In the first month of the second quarter there was experienced a sharp decline in new orders and shipments were of considerably less weight than in the preceding months. This seemed contrary to the presumptive logical effect of the proposed reduction in the 1934 crop to 10,000,000 bales. It was apparent consuming interests were not to be stampeded into a buying movement by threatened less cotton and higher prices for yarn.

An opinion frequently heard in the cotton yarn trade here was that actualities were more potent in the shaping of manufacturers' spring and summer campaign than crop control legislation then pending. Strikes were common in the textile trades as well as in other industries, making sustained production uncertain, and a proposed shortening of the work hours, to be balanced in earnings by increases in wages, had manufacturers guessing as to consumer-reaction to presumably higher prices for apparel, as well as for food stuffs. Thus did yarn interests account for slack business in April. It appeared, however, that yarn consuming manufacturers, while disposed to make no contracts in anticipation of increased cost of yarn as a possibility, were actuated in no little degree by fear of a depression in the raw cotton markets.

Carded yarns were sold down as low as 27 cents basis of 10s, around the middle of April, the common quotation for average good grade at that time being a cent to a cent and a half higher. Super carded, described also by some sellers as double carded quality, was quoted around 30 to 31 cents at that time, while sales were reported in a few instances at 29 to 30, such variations indicating the unsteadiness of the market as a whole.

Price weakness probably could be rightfully attributed to the eagerness of some spinners for new business. They were reported operating to capacity a few weeks before and having difficulty in shipping out orders on schedule. By April, it seemed, most of the spinners who were being pressed for deliveries early in March had caught up with shipping instructions. Several houses received suggestions from each of perhaps two or three spinners last month that orders would be acceptable, and each establishment solicited business from customers on their ledgers. It is explained that the offerings of each of several spinners were submitted to manufacturers somewhat indiscriminately, and the result was a growing belief among buyers that owners of yarn were in a hurry to reduce stocks and that an unusual number of mills were reaching out for business. In any event, prices obtainable descended to a point which was believed by seasoned yarn men to be painfully close to cost.

Failure to maintain prices of single combed peeler yarns was ascribed by some interests to low prices for which double carded was available. A mid-April sale of combed was on the basis of 42½ cents for 36s singles. Trading in both carded and combed was restricted mainly to small lots for deliveries in June at the latest. When, however, demand was lightest, most of the more important Philadelphia operators looked for firmness on a somewhat higher than the April level. It came to be indicated that mixture of cotton with worsted had proved unsatisfactory and manufacturers predicted wool would supersede worsted for 1934 clothing fabrics. Mercerized yarns have been in fairly steady movement, but tending last month to an easing, quotations then being on the basis of 70 to 73 cents for 60s, standard quality, with a few sales reported at 68 to 69.

Philadelphia prices quoted April 18, follow:

Single Carded Skeins

10s	28	12s	28½
14s	29	16s	29½
20s	31	26s	34
30s	36		

Single Carded Warps

10s	28½	12s	29
14s	29½	16s	30
20s	31½	26s	34½
30s	36½		

2-Ply Carded Skeins

10s	28½	12s	29
14s	29½	16s	30
20s	31½	24s	33½
26s	34½	30s	36½
40s	42½		

2-Ply Carded Warps

10s	29	12s	29½
14s	30	16s	30½
20s	32	24s	34
26s	35	30s	37
40s	43		

CARDED KNITTING YARN ON CONES

(These quotations are on net weight.)

Ordinary Quality

10s	28½	12s	29
14s	29½	16s	30
18s	30½	20s	31½
22s	32½	24s	33½
26s	34½	30s	36½
40s	43	30s tying in	35

Double Carded Grade

10s	30	12s	30½
14s	31	16s	31½
18s	32	20s	33
22s	34	24s	35
26s	36	30s	38
40s	44		

Carpet Yarns

8s and 9s white warp twist	27½
8s tinged tubes	26½
8s part waste	25

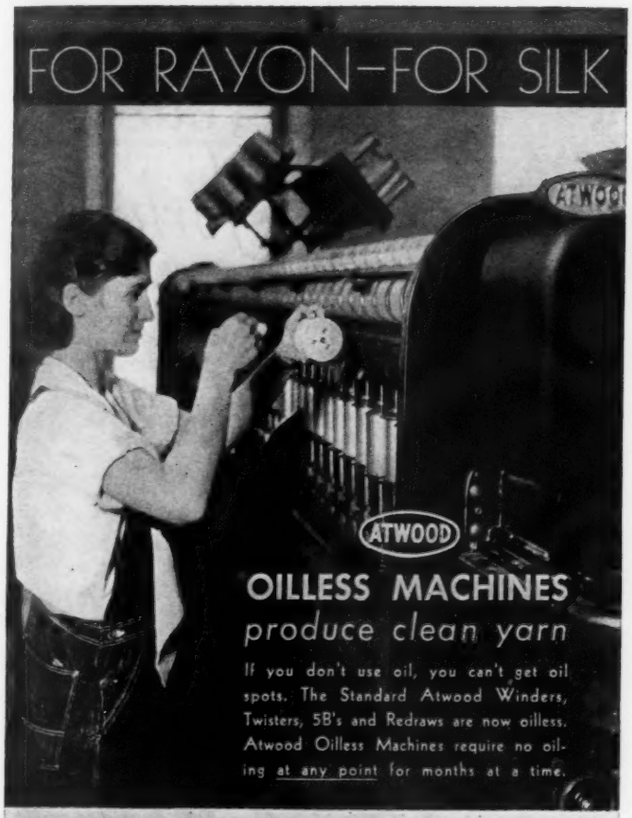
Two-Ply Combed Skeins and Warps

16s	38½	20s	40½
24s	40½	30s	44½
40s	48½	50s	54½
60s	59½	70s	69½
80s	79½		

Single Combed Yarn on Cones

10s	34	12s	34½
14s	35	16s	35½
18s	36½	20s	37½
24s	38	26s	39
30s	41	36s	44
38s	45	40s	46
50s	51	60s	58
70s	68	80s	78

Table from "Daily News Record"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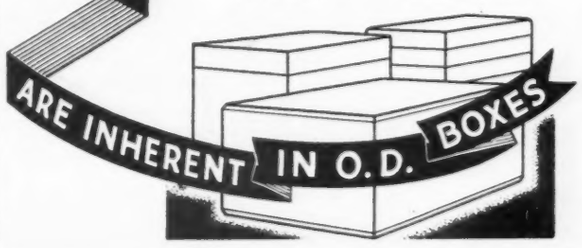

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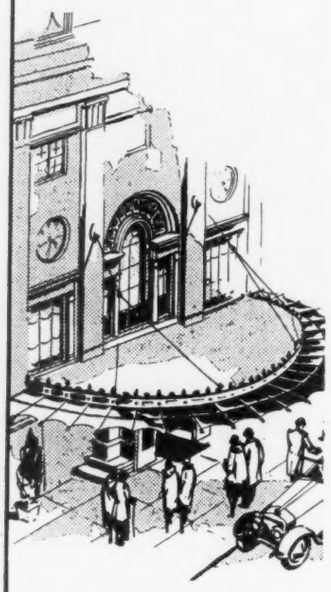

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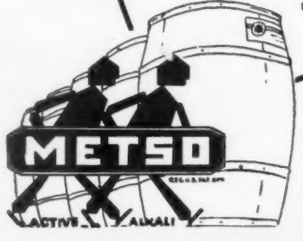
Reduce resists and increase profits with Metso. Today send for the name of the distributor nearest your mill.



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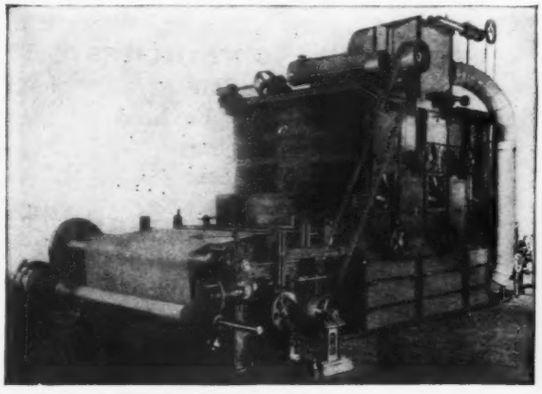

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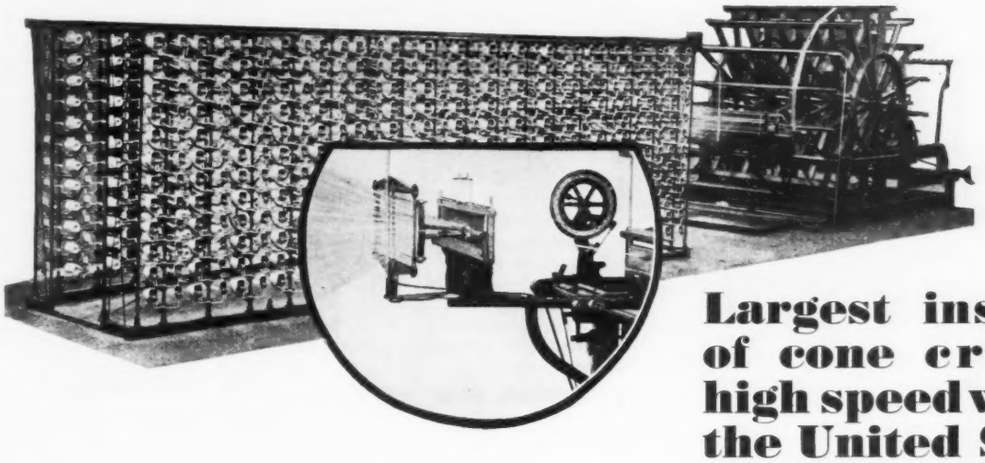

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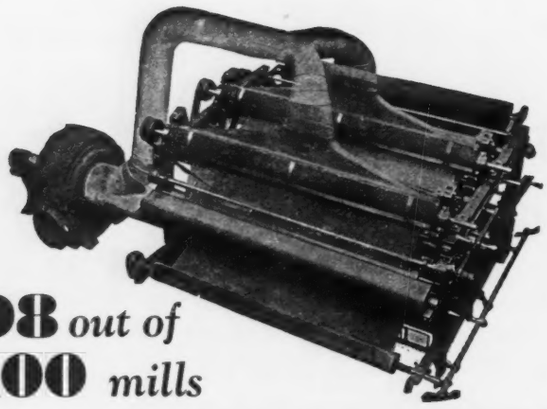

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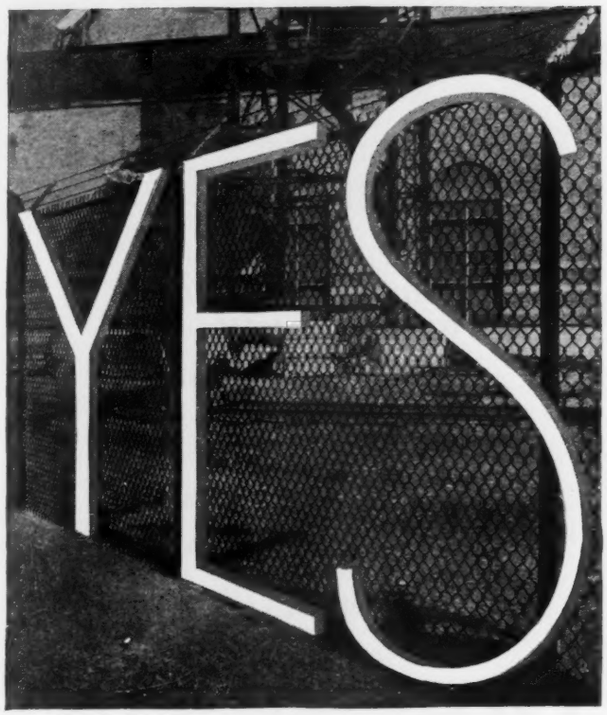

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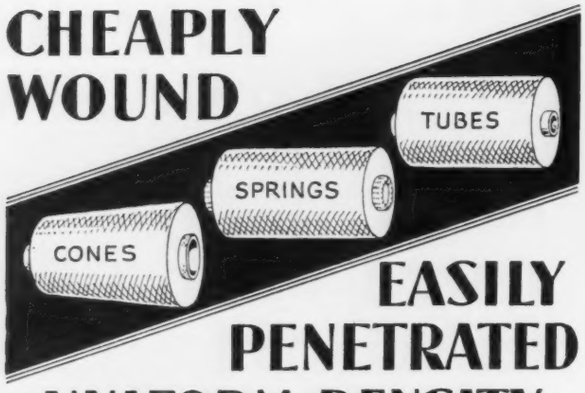

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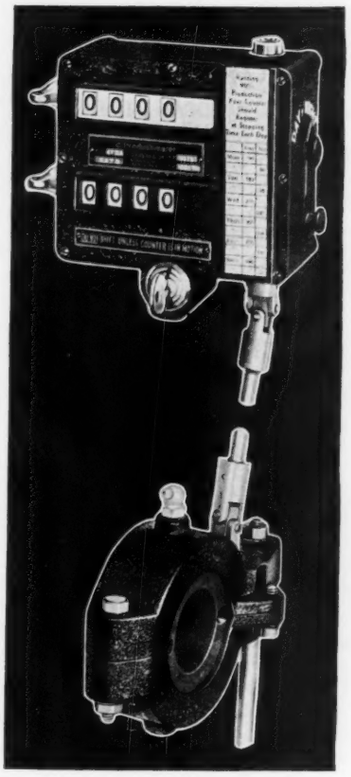

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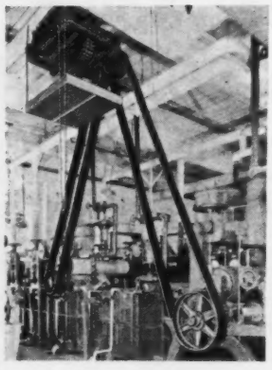

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Close up detail of Stewart Oval Back I Beam Fence post with integral [one Piece] extension arm.

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HOW DID YOU MAKE OUT WITH THOSE GRATON & KNIGHT 50-TYPE PICKERS TOMMY?
FINE, JACK. THEY ARE THE BEST I'VE EVER USED. THEY OUTWEAR ANY PICKER I KNOW ABOUT, GO ON EASIER AND FIT BETTER I'LL SPECIFY THEM EVERY TIME

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It is consistent money saving performance that sold Tommy and made Graton & Knight 50 Type Pickers more popular than any other.

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BOILERS KIERS
ACID TANKS
STAND PIPES
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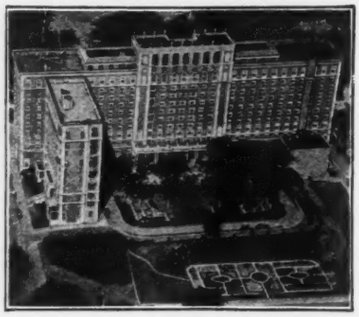
NEWNAN *EST. 1854* GEORGIA
FABRICATORS OF STEEL AND ALLOY STEEL PLATE



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600 SUPERB ROOMS
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and
TUB and SHOWER
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$2.50 to $5.00 per day
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with SHOWER
designed for business men at
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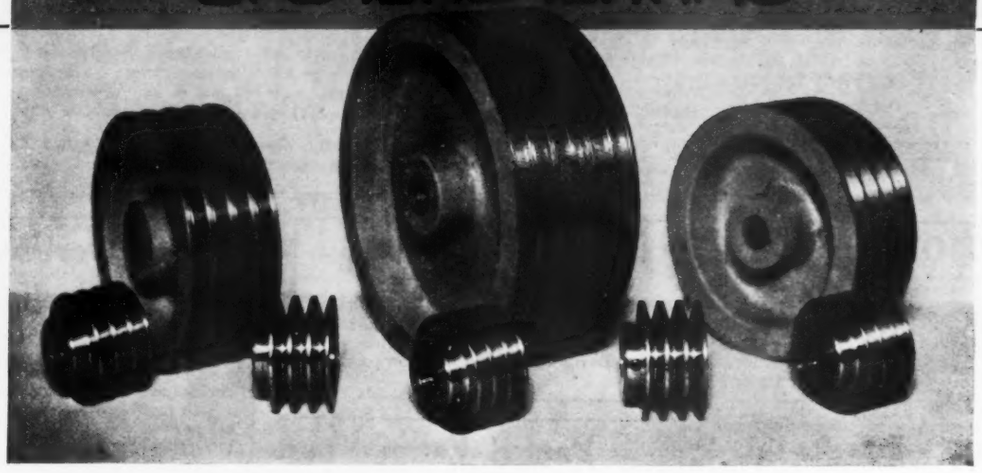

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Over half a century devoted to meriting business because of Quality Products, and thousands of satisfied customers attesting to the results of striving towards this ideal of service.

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PROVIDENCE, R. I.
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1—No. 101 Foster High Speed Winder, 40 spindlles, cones and tubes, motor drive.
5—No. 30 Foster Cone Winders, 100 spindles, No. 20 Foster Tensions.
6—No. 60 G. F. Universal Winders, 82 spindles, for wood cone, 1927.
2—Entwistle High Speed Warpers, magazine creel, 1927.
7—136 Spindle Saco-Lowell Twisters, Tape Drive, 5½" gauge, 4½" ring, creel stands, 1920.
1—132 Spindle Fales & Jenks Twister, Tape Drive, 5½" gauge, 4½" ring, creel stands, 1916.
4—160 Spindle Howard & Bullough Twisters, Tape Drive, 5½" gauge, 4½" ring, 1917.
3—140 Spindle Howard & Bullough Twisters, tape drive, 5½" gauge, 4½" ring, 1917.
82—52" Draper Model "E" Looms, 57" reed space, roller tops, Roper let-off, Midget feelers, single filling forks, vibrating whip roll, worm take up, Veeder pick counters, 3 bar warp stop motion, ½ HP. G.E. Motors, 3 phase, 60 cycle, 440 volt.
1—Merrow Sewing Machine, style 60ABB, motor driven.
1—54" Curtis & Marble Railway Sewing Machine, No. 25, 1928.
1—Set Durant Automatic Cloth Guides, 1928.
1—54" Curtis & Marble Vertical Cloth Brusher, Heath Patent, 1928.
1—54" Curtis & Marble Cloth Inspecting Machine, cloth cradle, reverse motion, type A rolling up head.
1—44" Curtis & Marble Cloth Folder, 1928.

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The Brooks Oil Company desire experienced boiler room specialty salesmen to cover two established territories selling Brooks Improved Boiler Metal Treatment and other products. Only well qualified and recommended need apply. Must have automobile. Drawing account and high commission. Excellent opportunity for the right men. State full experience and references. Address Brooks Oil Company, Cleveland, Ohio

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GRANT BLDG. ATLANTA, GA.

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SURE WAY

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SCALE-PITTING *and* CORROSION *in Your Boilers*

Simple - Safe - Positive!

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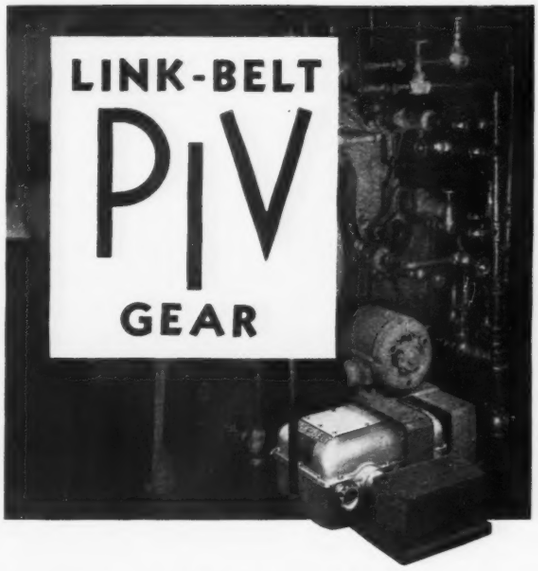
Take this opportunity to get the full details, because the use of BROOKS IMPROVED BOILER METAL TREATMENT is one sure way to stop scale, pitting and corrosion in your boilers.

Brooks Oil Co.

CLEVELAND, OHIO

ANY SPEED *instantly*



CONTROL *that offsets many manufacturing* HAZARDS

POSITIVE, ACCURATE, INFINITELY VARIABLE SPEED CONTROL MEANS MUCH IN TEXTILE

processes, where the ability of labor, quality of material and mechanical operation are subject to such sudden and decided variations.

Made in many sizes, with manual, remote, semi-automatic or fully automatic operating devices, P. I. V. Gears are ideal for application to every textile machine requiring speed change during operation.

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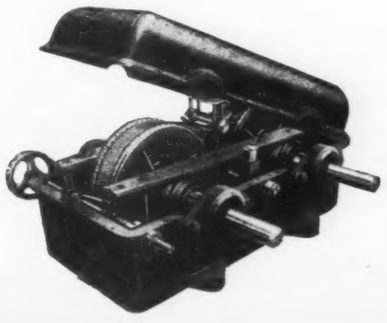
Offices in Principal Cities

4839



NRA

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LINK-BELT P.I.V. GEAR

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BUILDERS OF COUNTING DEVICES SINCE 1878

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